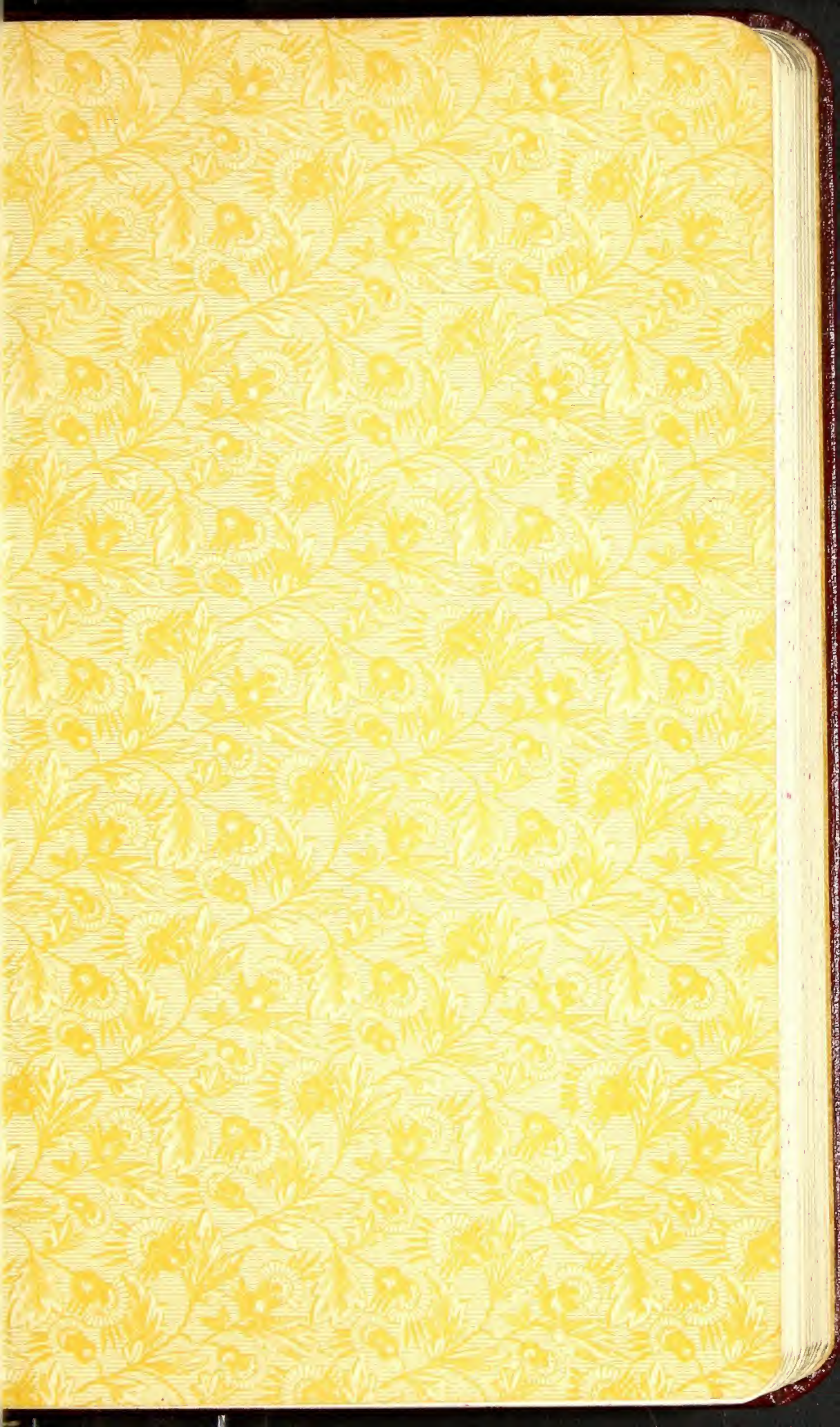


S
I
R
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1927







THE
**SIRDAR-IDEAL
FITTER**

Sirdar and Ideal
Boilers
Sirdar Radiators

MADE IN CANADA

1927

Please destroy all previous editions
and avoid confusion

Thomas Robertson & Company
Limited
Montreal, Canada

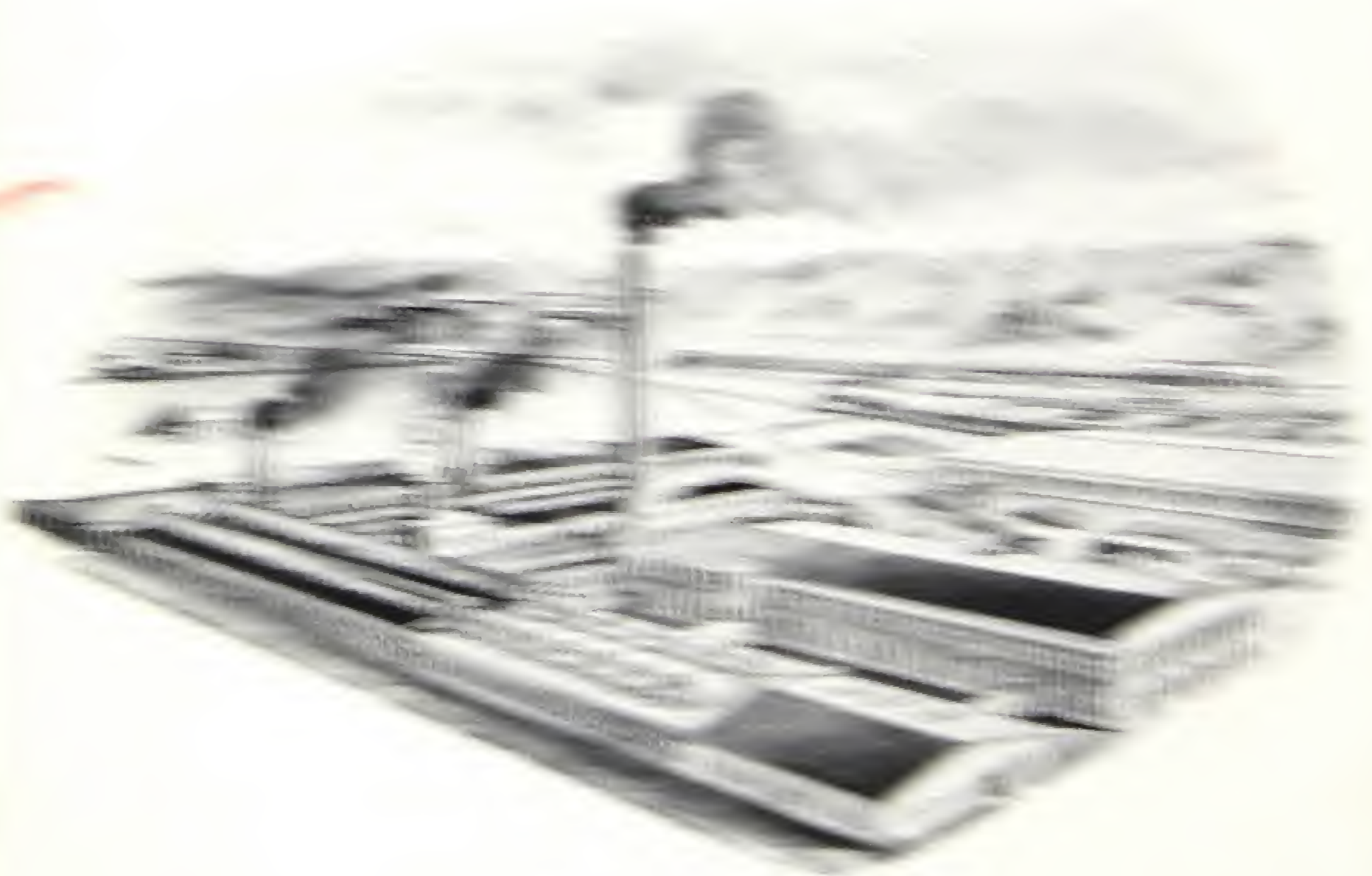
SHEWAN & TOMES BUILDERS & ENGINEERS



Commercial Plant

THE SHEWAN & TOMES BUILDING

SHANGHAI



Tobacco Plant

THE SHEWAN & TOMES BUILDING

SHANGHAI

Sirdar and Ideal Boilers and Water Heaters

Fuel Basis for Ratings

SIRDAR AND IDEAL BOILERS (except "Down-Draft" type): The ratings are based on use of good grades of anthracite coal, since that fuel is more nearly uniform in heating effects. For the smaller sizes of **SIRDAR AND IDEAL BOILERS** coal of regular "stove" or "range" size is in most cases the best to use: while in the larger boilers "egg" size will be found more suitable. Other kinds of fuel, preferably "caking" soft coals, may be used if due consideration is given to difference in calorific power, in space occupied by a given weight of the fuel, and in amount of attendance necessary.

IDEAL DOWN-DRAFT SMOKELESS BOILERS: The ratings are based upon the use of an average grade of "free-burning" soft coal, a fuel mined in nearly all parts of this country and obtainable in all localities. If "caking" coals or those of inferior qualities are to be used, proper allowance should be made.

Rating Conditions

CONDITIONS: The ratings of **SIRDAR** and **IDEAL BOILERS** are based on the quantity of steam delivered at the Boiler outlet: hence, in addition to the direct radiation to be used in selecting boiler of right capacity, there must be added the load imposed by uncovered mains and risers, both flow and return, or any other load which may be attached. An uncovered Boiler is likewise an additional tax. For **STEAM BOILERS** it is assumed that a pressure of two pounds is maintained at the Boiler, and that the radiation is standing in quiet air at 70 degrees F. Under such conditions a square foot of heat-radiating surface will condense not more than 0.25 ($\frac{1}{4}$) pound of steam per hour. For **WATER BOILERS** it is assumed that a temperature of 180 degrees F. is maintained at the Boiler with the radiation standing in quiet air at 70 degrees F.

Domestic Water Heating

METHODS COMPARED: When a pipe coil or cast-iron section is introduced into firepot of a **SIRDAR** or **IDEAL BOILER** to heat water for domestic use, additional capacity should be provided—viz.: Based on temperature rise of 45 degrees F. per hour additional tax is imposed as follows:

STEAM BOILER— $1\frac{1}{2}$ sq. ft. direct radiation per gallon of water heated
WATER BOILER— $2\frac{1}{2}$ sq. ft. direct radiation per gallon of water heated

Due consideration being given to capacity of storage tank used.

This method is not recommended, because the demand for hot water for domestic use is independent of weather conditions. The heating power of coils varies with conditions of fire in the Boiler, being greatest in winter when firing is at maximum and least in mild weather when fire runs low. A separate **SIRDAR Water Heater** best supplies this demand. burns little fuel, easily regulated and heated water is constant all summer when most needed, while a coil in Boiler would then be useless.

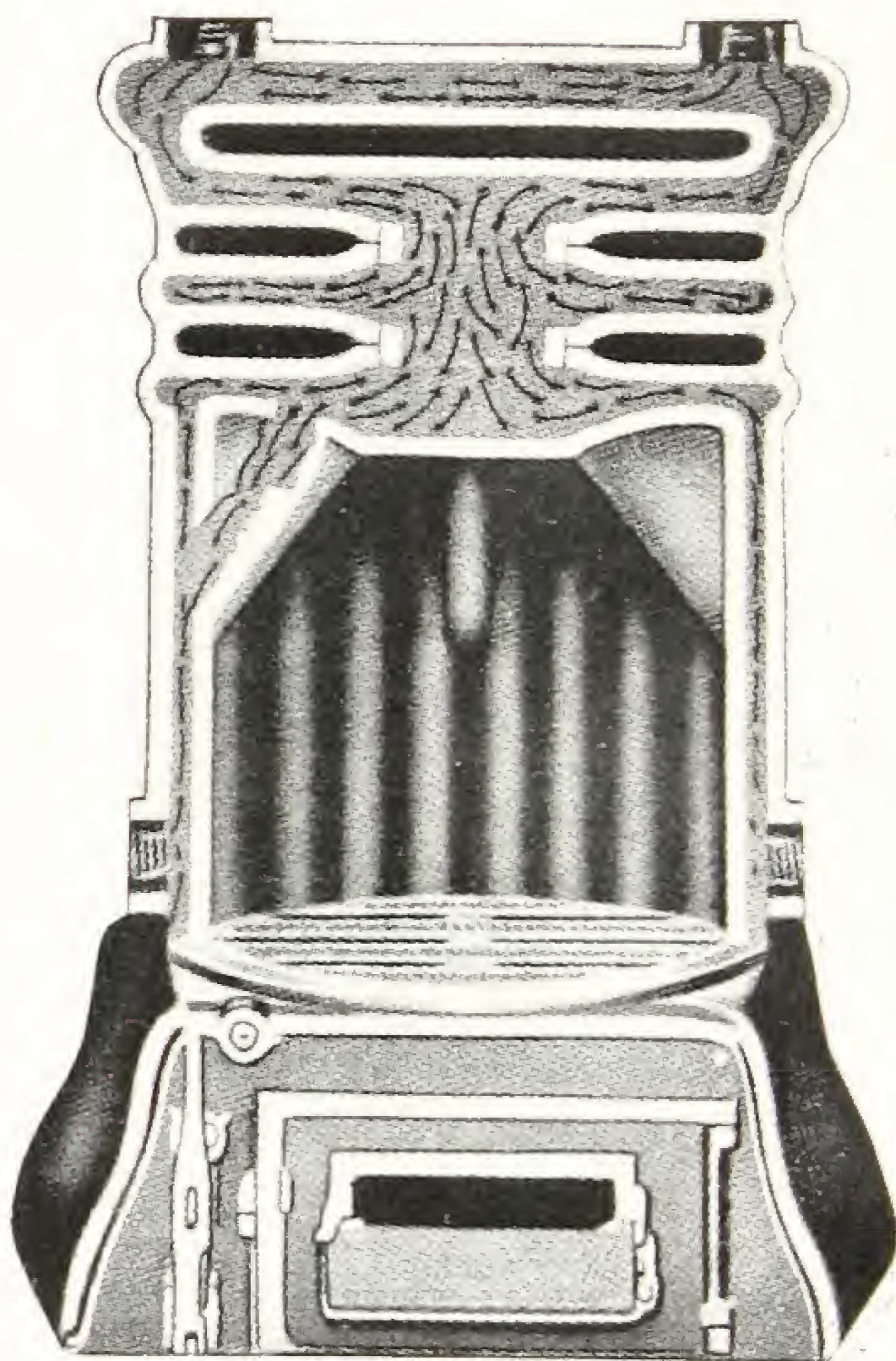
Guarantee and Coverings

SIRDAR AND IDEAL BOILERS are guaranteed only to the extent of furnishing new castings for any found defective in manufacture. On account of the varying conditions surrounding their installation, we do not guarantee our Boilers otherwise.

Both on account of increased efficiency and greater economy, we recommend that all Boilers be thoroughly protected by a substantial covering of asbestos. On page 227 tables will be found giving the amount of Asbestos Cement required to cover our **SIRDAR AND IDEAL BOILERS**.

SECTIONAL VIEW OF
Sirdar Round Hot Water Boiler

SHOWING ONE REASON
WHY IT WILL HEAT WATER QUICKER AND
WITH LESS FUEL THAN ANY OTHER
CONSTRUCTION

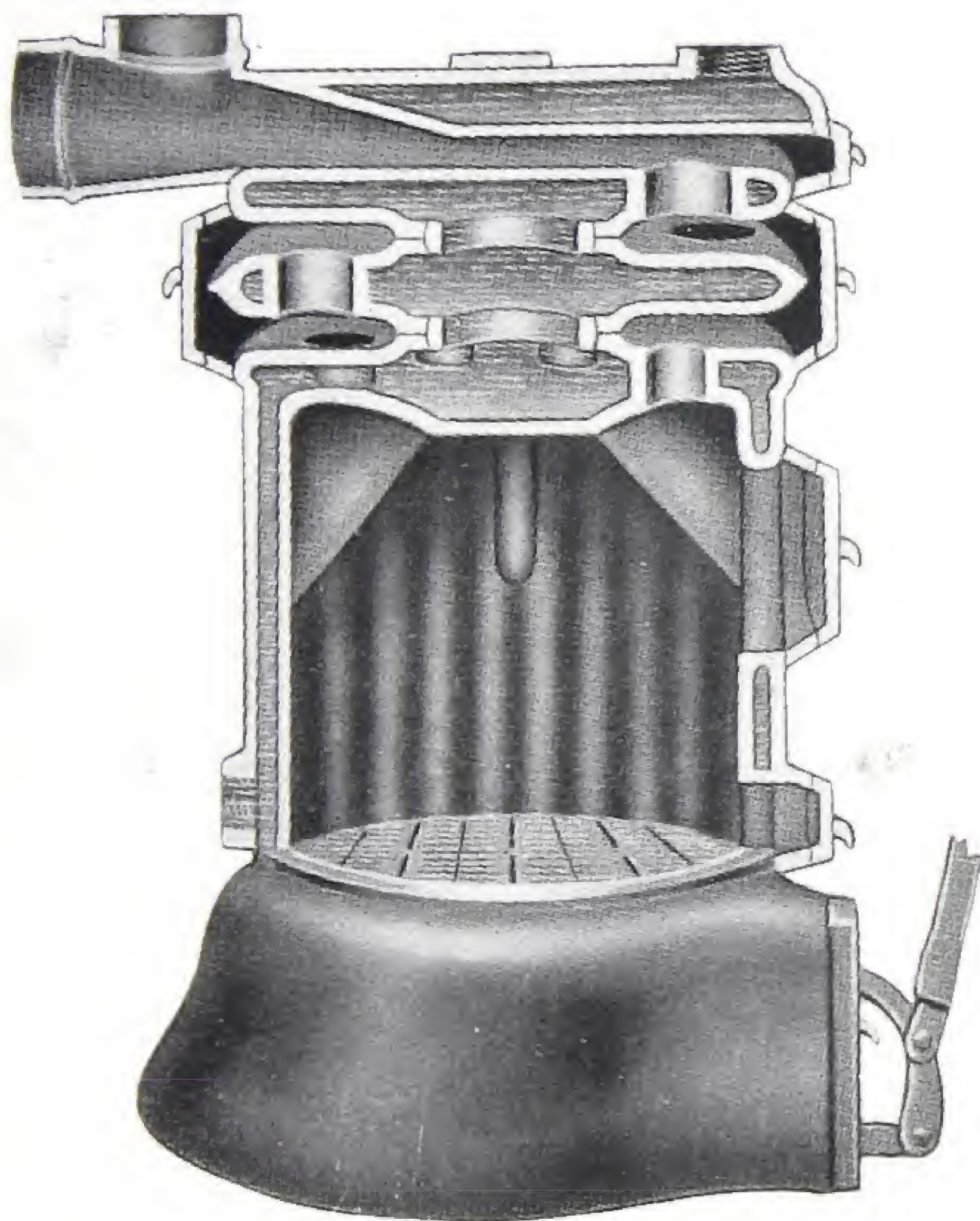


Note The way the Water Travels
Over The Fire And Up The Centre

Showing the internal circulation of the water, from its entrance at the bottom of the fire pot, up and over the fire pot top (the hottest part of the boiler) then directly up through the centre and always surrounded by the smoke and hot gasses, taking the shortest route, and with the least friction from the boiler to the radiators.

SECTIONAL VIEW OF
Sirdar Round Hot Water Boiler

SHOWING ANOTHER REASON
WHY IT WILL HEAT WATER QUICKER AND
WITH LESS FUEL THAN ANY OTHER
CONSTRUCTION

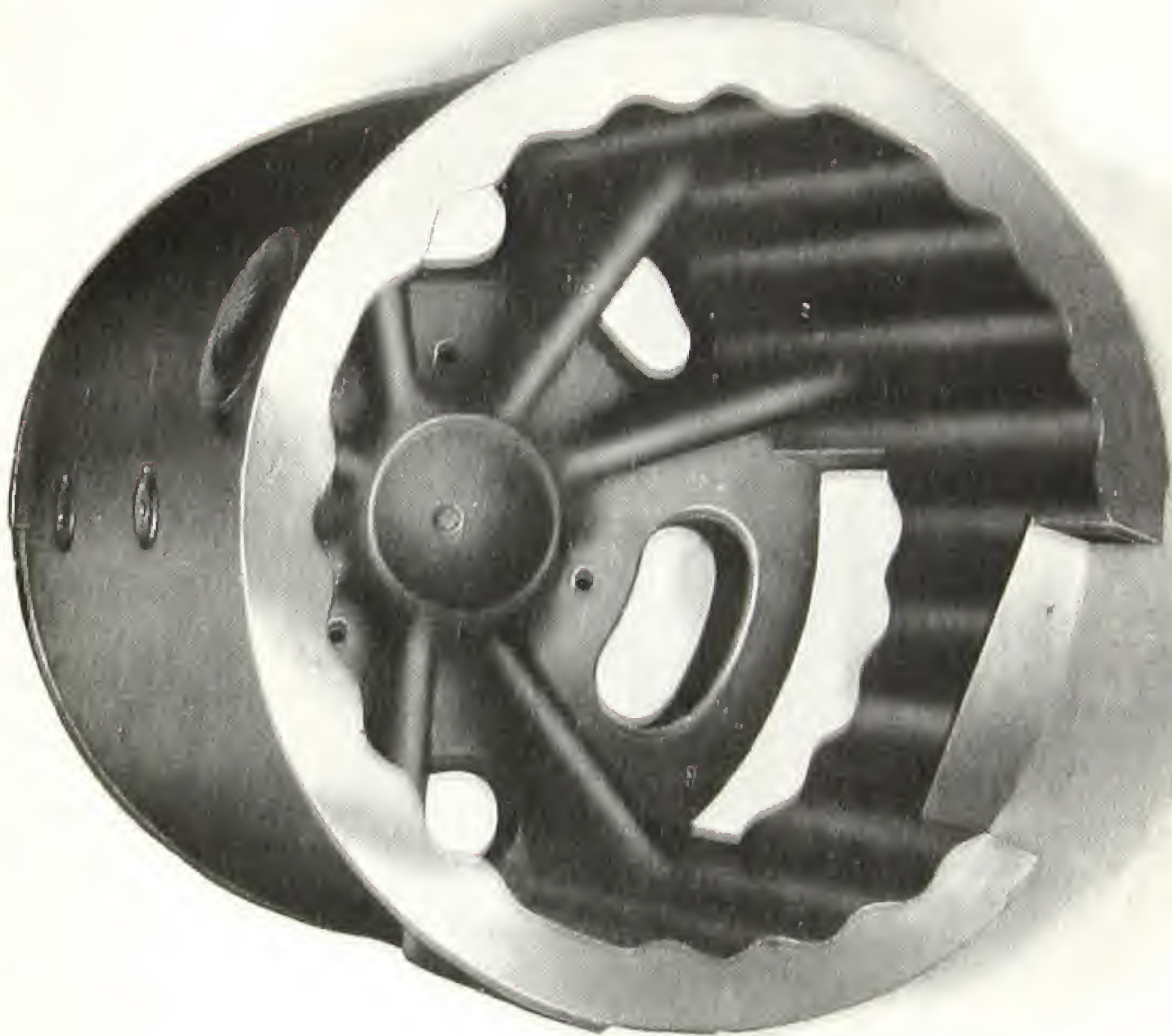


Note The Way The Fire Travels
Staggers From One Section To The Other

Showing the circulation of the smoke and hot gasses, from the firepot, to the smoke outlet, staggering from one section to the other, always surrounding the water, finally expending their last energy on the bottom of the top section before escaping, cold, after all their heat value has been taken up by the water.

The Sirdar Boiler

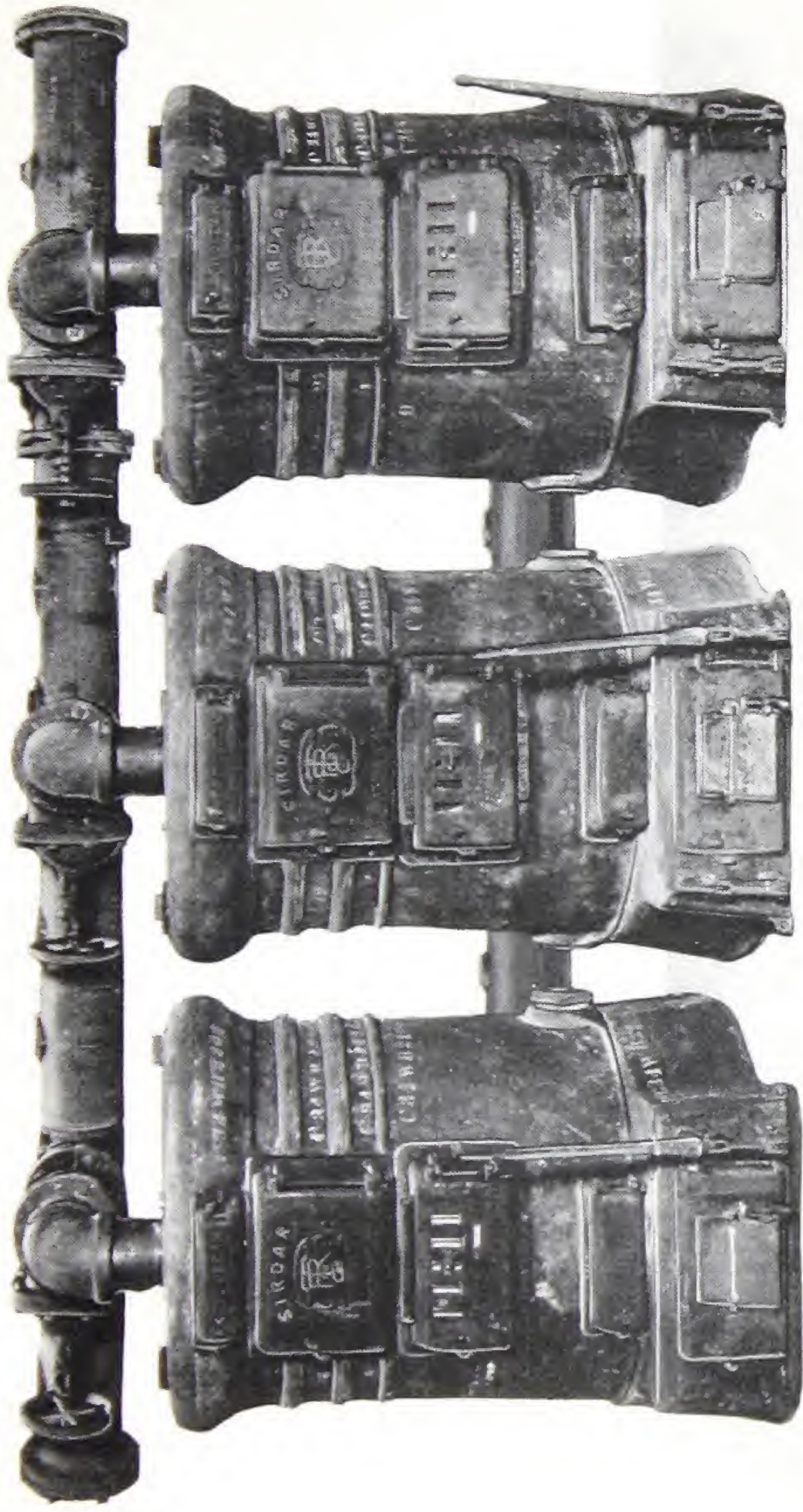
Fire Pot Section



Presents "25% MORE" direct heating surface to
the action of the fire than any other boiler.

This must mean
MORE HEAT—LESS FUEL CONSUMED

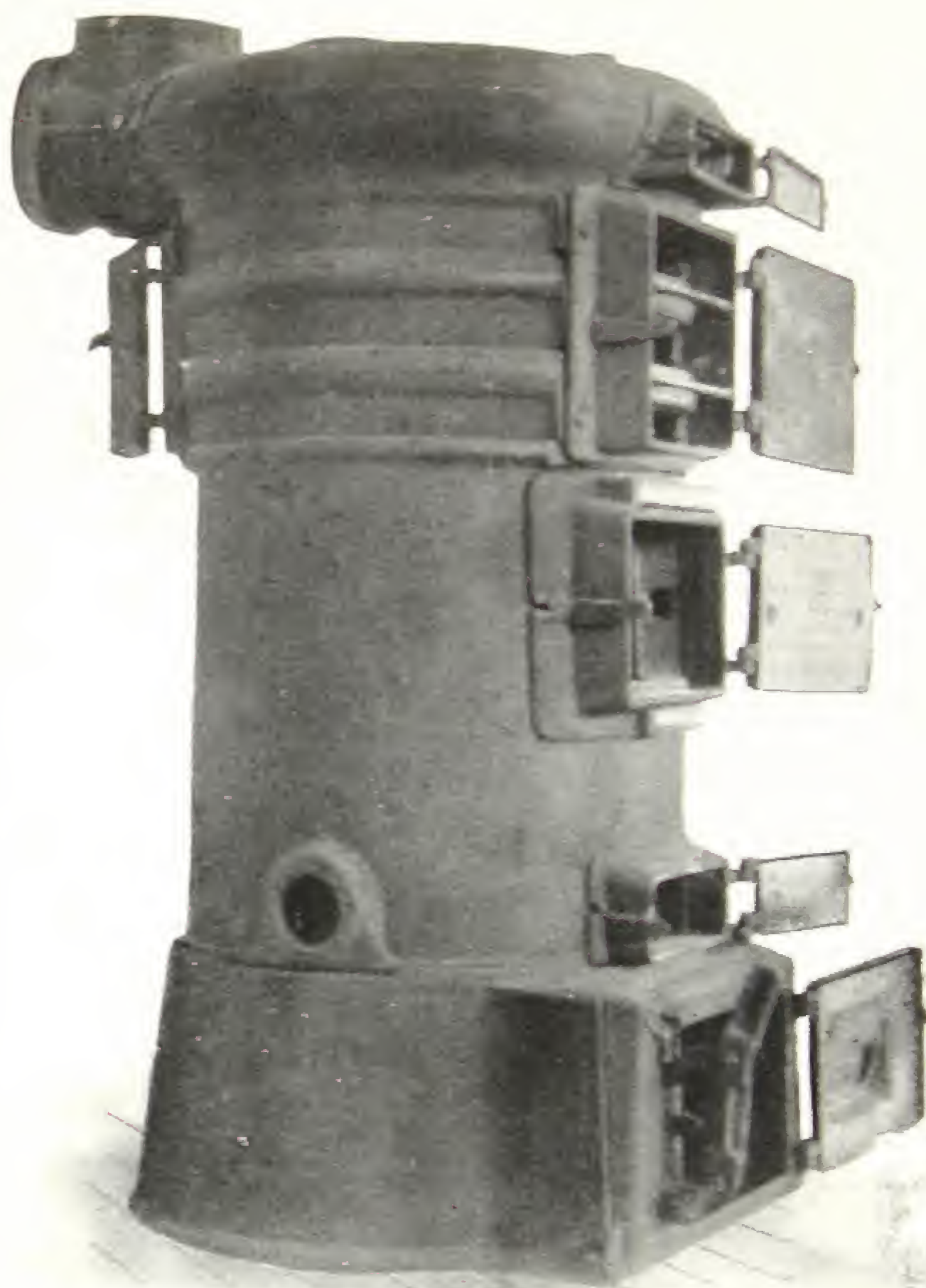
Three Sirdar Hot Water Boilers, C-34-W, with Headers and Valves



Installed in Baldwin Park Greenhouse, City of Montreal, M. E. Bernadet, Supt.

Sirdar Hot Water Boiler

With Low Base



Style C-25-W

Smoke pipe may be connected at back or top of smoke hood as desired.

Headers can be supplied if required, see page 12.

For twin or triple headers to connect two or three boilers, see page 13.

Sirdar Hot Water Boiler

With Low Base

| Size of Boiler | Comparison No. | Size Grate | Height | Diameter of Base | Number of Openings | Smoke Pipe | Net Rating Sq feet* | Gross Rating Sq feet | List Price |
|----------------|-------------------|------------|---------------------|------------------|--------------------|------------|---------------------|----------------------|------------|
| A-15-W | 0 | 15 | SEE PAGES 14 AND 15 | 23 $\frac{1}{4}$ | 3-2 | 7 | 200 | 300 | \$ 226.00 |
| B-15-W | | 15 | | 23 $\frac{1}{4}$ | 3-2 | 7 | 235 | 350 | 252.00 |
| A-17-W | 1 | 17 | | 24 $\frac{7}{8}$ | 3-2 | 7 | 250 | 375 | 268.00 |
| B-17-W | 1 $\frac{1}{2}$ | 17 | | 24 $\frac{7}{8}$ | 3-2 | 7 | 300 | 450 | 287.00 |
| C-17-W | | 17 | | 24 $\frac{7}{8}$ | 3-2 | 7 | 325 | 485 | 300.00 |
| A-19-W | | 19 | | 27 $\frac{1}{4}$ | 3-2 $\frac{1}{2}$ | 8 | 350 | 525 | 314.00 |
| B-19-W | 2 | 19 | | 27 $\frac{1}{4}$ | 3-2 $\frac{1}{2}$ | 8 | 365 | 550 | 320.00 |
| C-19-W | 2 $\frac{1}{2}$ | 19 | | 27 $\frac{1}{4}$ | 3-2 $\frac{1}{2}$ | 8 | 420 | 625 | 356.00 |
| A-22-W | | 22 | | 30 $\frac{1}{2}$ | 3-3 | 9 | 460 | 690 | 370.00 |
| B-22-W | 3 | 22 | | 30 $\frac{1}{2}$ | 3-3 | 9 | 500 | 750 | 382.00 |
| C-22-W | 3 $\frac{1}{2}$ | 22 | | 30 $\frac{1}{2}$ | 3-3 | 9 | 585 | 875 | 425.00 |
| A-25-W | 4 | 25 | | 33 $\frac{1}{2}$ | 3-3 | 10 | 685 | 1025 | 462.00 |
| B-25-W | 4 $\frac{1}{2}$ | 25 | | 33 $\frac{1}{2}$ | 3-3 | 10 | 750 | 1125 | 498.00 |
| C-25-W | 5 | 25 | | 33 $\frac{1}{2}$ | 3-3 | 10 | 835 | 1250 | 550.00 |
| A-28-W | 5 $\frac{1}{2}$ | 28 | | 37 $\frac{1}{2}$ | 2-4 & 1-5 | 11 | 935 | 1400 | 590.00 |
| B-28-W | 6 | 28 | | 37 $\frac{1}{8}$ | 2-4 & 1-5 | 11 | 1000 | 1500 | 654.00 |
| C-28-W | 6A | 28 | | 37 $\frac{1}{8}$ | 2-4 & 1-5 | 11 | 1100 | 1650 | 706.00 |
| A-31-W | 6 $\frac{1}{2}$ | 31 | | 39 $\frac{3}{4}$ | 2-5 & 1-5 | 12 | 1250 | 1875 | 775.00 |
| B-31-W | 6 $\frac{1}{2}$ A | 31 | | 39 $\frac{3}{4}$ | 2-4 & 1-5 | 12 | 1350 | 2025 | 840.00 |
| C-31-W | 7 | 31 | | 39 $\frac{3}{4}$ | 2-4 & 1-5 | 12 | 1500 | 2250 | 880.00 |
| A-34-W | | 34 | | 42 $\frac{5}{8}$ | 2-5 & 1-6 | 13 | 1600 | 2400 | 910.00 |
| B-34-W | 7 $\frac{1}{2}$ | 34 | | 42 $\frac{5}{8}$ | 2-5 & 1-6 | 13 | 1765 | 2650 | 945.00 |
| C-34-W | 8 | 34 | | 42 $\frac{5}{8}$ | 2-5 & 1-6 | 13 | 2000 | 3000 | 1052.00 |

Letter "A" represents boiler without intermediate sections.

Letter "B" represents boiler with one intermediate section.

Letter "C" represents boiler with two intermediate sections.

Ratings are based on hard coal being used as fuel.

If soft coal is used increase boiler one size.

Net ratings represent capacity of boiler not including mains and risers.

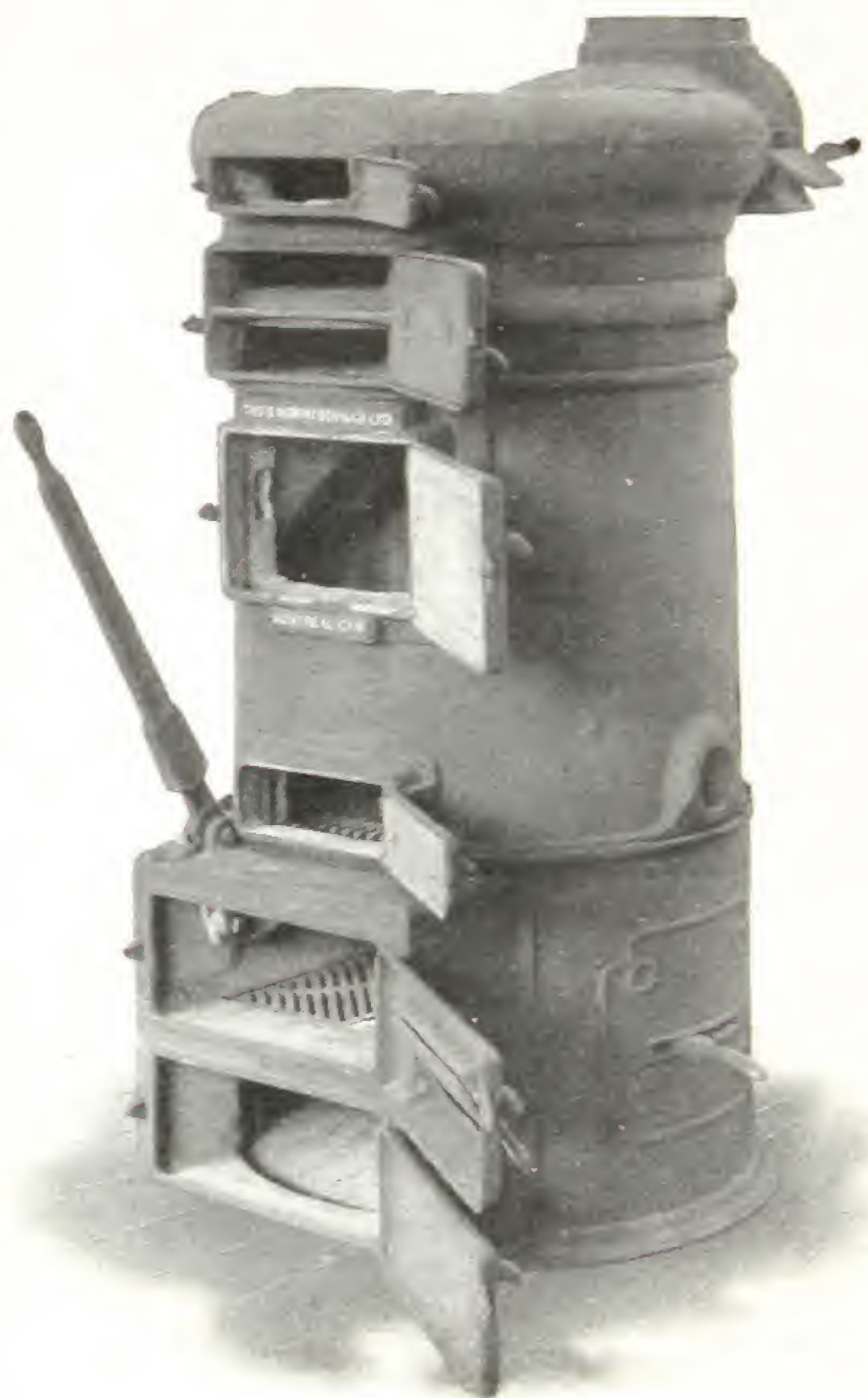
Gross ratings represent capacity of boiler including mains and risers.

For approximate weights see page 57.

For instruction about ordering repairs see page 69.

Sirdar Hot Water Boiler

With High Base



Style B-25-W

Sirdar Boilers may be fitted with Domestic Water Heaters for heating water for Bath, Sink, &c.

Sirdar Hot Water

With High Base

| Size of Boiler | Comparison No. | Size Grate | Height | Diameter of Base | Number of Opening | Smoke Pipe | Net Rating Sq. feet* | Gross Rating Sq. feet | List Price |
|----------------|-------------------|------------|---------------------|------------------|-------------------|------------|----------------------|-----------------------|------------|
| A-15-W | 0 | 15 | SEE PAGES 14 AND 15 | 21 $\frac{3}{8}$ | 3-2 | 7 | 200 | 300 | \$248.00 |
| B-15-W | | 15 | | 21 $\frac{3}{8}$ | 3-2 | 7 | 235 | 350 | 274.00 |
| A-17-W | 1 | 17 | | 22 $\frac{7}{8}$ | 3-2 | 7 | 250 | 375 | 302.00 |
| B-17-W | 1 $\frac{1}{2}$ | 17 | | 22 $\frac{7}{8}$ | 3-2 | 7 | 300 | 450 | 318.00 |
| C-17-W | | 17 | | 22 $\frac{7}{8}$ | 3-2 | 7 | 325 | 485 | 331.00 |
| A-19-W | | 19 | | 25 $\frac{1}{8}$ | 3-2 $\frac{1}{2}$ | 8 | 350 | 525 | 354.00 |
| B-19-W | 2 | 19 | | 25 $\frac{1}{8}$ | 3-2 $\frac{1}{2}$ | 8 | 365 | 550 | 360.00 |
| C-19-W | 2 $\frac{1}{2}$ | 19 | | 25 $\frac{1}{8}$ | 3-2 $\frac{1}{2}$ | 8 | 420 | 625 | 395.00 |
| A-22-W | | 22 | | 28 $\frac{3}{8}$ | 3-3 | 9 | 460 | 690 | 413.00 |
| B-22-W | 3 | 22 | | 28 $\frac{3}{8}$ | 3-3 | 9 | 500 | 750 | 425.00 |
| C-22-W | 3 $\frac{1}{2}$ | 22 | | 28 $\frac{3}{8}$ | 3-3 | 9 | 585 | 875 | 465.00 |
| A-25-W | 4 | 25 | | 31 $\frac{3}{4}$ | 3-3 | 10 | 685 | 1025 | 505.00 |
| B-25-W | 4 $\frac{1}{2}$ | 25 | | 31 $\frac{3}{4}$ | 3-3 | 10 | 750 | 1125 | 545.00 |
| C-25-W | 5 | 25 | | 31 $\frac{3}{4}$ | 3-3 | 10 | 835 | 1250 | 603.00 |
| A-28-W | 5 $\frac{1}{2}$ | 28 | | 34 $\frac{5}{8}$ | 2-4 & 1-5 | 11 | 935 | 1400 | 651.00 |
| B-28-W | 6 | 28 | | 34 $\frac{5}{8}$ | 2-4 & 1-5 | 11 | 1000 | 1500 | 700.00 |
| C-28-W | 6A | 28 | | 34 $\frac{5}{8}$ | 2-4 & 1-5 | 11 | 1100 | 1650 | 746.00 |
| A-31-W | 6 $\frac{1}{2}$ | 31 | | 37 $\frac{1}{4}$ | 2-4 & 1-5 | 12 | 1250 | 1875 | 842.00 |
| B-31-W | 6 $\frac{1}{2}$ A | 31 | | 37 $\frac{1}{4}$ | 2-4 & 1-5 | 12 | 1350 | 2025 | 905.00 |
| C-31-W | 7 | 31 | | 37 $\frac{1}{4}$ | 2-4 & 1-5 | 12 | 1500 | 2250 | 950.00 |
| A-34-W | | 34 | | 40 $\frac{1}{2}$ | 2-5 & 1-6 | 13 | 1600 | 2400 | 982.00 |
| B-34-W | 7 $\frac{1}{2}$ | 34 | | 40 $\frac{1}{2}$ | 2-5 & 1-6 | 13 | 1765 | 2650 | 1017.00 |
| C-34-W | 8 | 34 | | 40 $\frac{1}{2}$ | 2-5 & 1-6 | 13 | 2000 | 3000 | 1160.00 |

Letter "A" represents boiler without intermediate sections.

Letter "B" represents boiler with one intermediate section.

Letter "C" represents boiler with two intermediate sections.

Ratings are based on hard coal being used as fuel.

If soft coal is used increase boiler one size.

Net ratings represent capacity of boiler not including mains and risers.

Gross ratings represent capacity of boiler including mains and risers.

For approximate weights see page 57.

For instructions about ordering repairs see page 69.

Headers for Sirdar Boilers



| | |
|---|--|
| 2½ in. screwed, with two 2 in. outlets... | { flow... 9 lbs. return... 9 lbs. |
| 3 in. screwed, with two 2 in. outlets... | { flow... 9 lbs. return... 9 lbs. |
| 3 in. flanged, with four 2 in. outlets... | { flow... 35 lbs. return... 45 lbs. |
| 4 in. flanged, with four 2 in. outlets... | { flow... 35 lbs. return... 45 lbs. |
| 16c. per lb. net. | |

Domestic Water Heaters



No. 12



ARM

| | | | |
|--------|----------------------|-------------------|--------|
| SIRDAR | No. 12, | with 9 in. centre | \$4.50 |
| " | with 13 in. arm, 9 " | " " | 4.00 |
| " | " 21 " | " 9 " | 5.25 |
| " | " 13 " | " 6 " | 4.00 |

LIST PRICES FOR

Twin, Triple & Quadruple Connections for "Sirdar" Hot Water Boilers Complete with Valves

| | Twin | Triple | Quadruple |
|-----------------------|----------|----------|-----------|
| Up to A-25-W..... | \$145.00 | \$210.00 | \$290.00 |
| B-25-W to C-28-W..... | 200.00 | 295.00 | 400.00 |
| A-31-W to A-34-W..... | 280.00 | 410.00 | 560.00 |
| B-34-W to C-34-W..... | 320.00 | 460.00 | 640.00 |

Net allowance for valves if not required — headers:
4 in., \$10.00, 5 in., \$15.00, 6 in., \$18.00, 7 in., \$24.00.

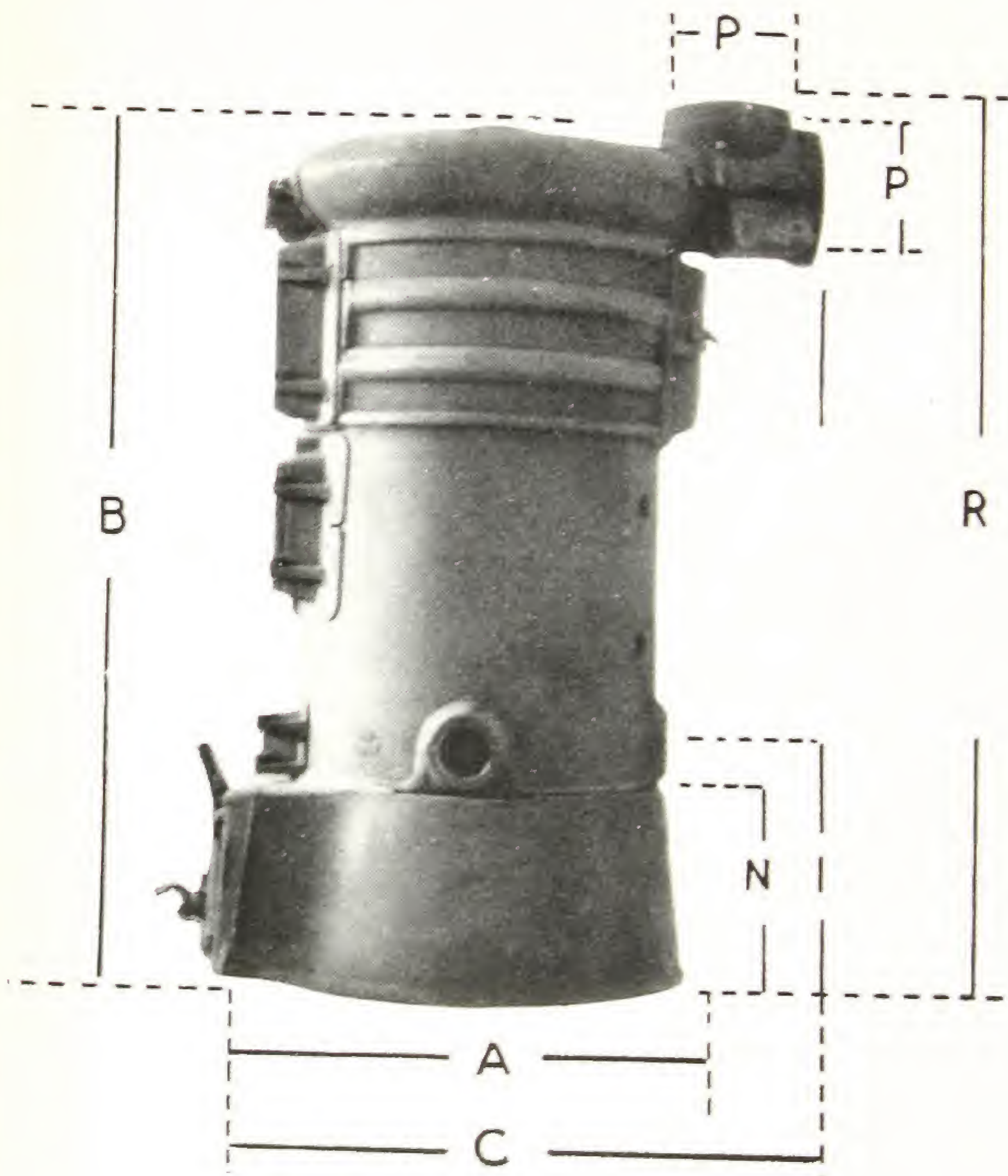
Twin Connections for Ideal Sectional Boilers

| | Water |
|----------------------------------|----------|
| 1000 sq. ft. and under..... | \$285.00 |
| 1001 sq. ft. to 3500 sq. ft..... | 380.00 |
| 3501 sq. ft. to 5500 sq. ft..... | 570.00 |
| 5501 sq. ft. to 7000 sq. ft..... | 650.00 |
| Over 7000 sq. ft..... | 790.00 |

| | Steam |
|----------------------------------|----------|
| 1000 sq. ft. and under..... | \$235.00 |
| 1001 sq. ft. to 2000 sq. ft..... | 315.00 |
| 2001 sq. ft. to 3000 sq. ft..... | 395.00 |
| 3001 sq. ft. to 6000 sq. ft..... | 475.00 |
| 6001 sq. ft. to 9000 sq. ft..... | 630.00 |

Sirdar Boiler Fitting Measurements

Details Opposite Page



For width of front, size of grate and other details;
see pages 7 and 9.

Sirdar Hot Water Boiler Measurements

| No. | A | C | B | | R | | I | | N | | P |
|-----------|--------------------------------|--------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|--------------------------------|--------------------------------|--------------------------------|-----|
| | | | High | Low | High | Low | High | Low | High | Low | |
| A 15..... | 23 ³ / ₄ | 29 ⁷ / ₈ | 49 ⁹ / ₁₆ | 43 ¹ / ₂ | 49 ⁹ / ₁₆ | 43 ¹ / ₂ | 20 ⁹ / ₁₆ | 14 ¹ / ₂ | 18 ¹ / ₂ | 12 ³ / ₄ | 7" |
| B 15..... | " | " | 53 ⁹ / ₁₆ | 47 ¹ / ₂ | 53 ⁹ / ₁₆ | 47 ¹ / ₂ | " | " | " | " | 7" |
| A 17..... | 25 ³ / ₈ | 32 ¹ / ₂ | 51 ³ / ₄ | 45 ¹ / ₈ | 55 ⁹ / ₁₆ | 48 ¹ / ₄ | 21 ⁵ / ₈ | 14 ⁵ / ₈ | 19 ³ / ₈ | " | 7" |
| B 17..... | " | " | 55 ³ / ₄ | 49 ¹ / ₈ | 59 ⁹ / ₁₆ | 52 ¹ / ₄ | " | " | " | " | 7" |
| C 17..... | " | " | 59 ³ / ₄ | 53 ¹ / ₈ | 63 ⁹ / ₁₆ | 56 ¹ / ₄ | " | " | " | " | 7" |
| A 19..... | 27 ⁵ / ₈ | 35 ¹ / ₂ | 52 ³ / ₈ | 45 ¹ / ₄ | 56 ⁹ / ₁₆ | 49 ⁷ / ₁₆ | 21 ⁷ / ₃ | 14 ³ / ₄ | 19 ⁷ / ₈ | " | 8" |
| B 19..... | " | " | 56 ³ / ₈ | 49 ¹ / ₄ | 60 ⁹ / ₁₆ | 53 ⁷ / ₁₆ | " | " | " | " | 8" |
| C 19..... | " | " | 60 ³ / ₈ | 53 ¹ / ₄ | 64 ⁹ / ₁₆ | 57 ⁷ / ₁₆ | " | " | " | " | 8" |
| A 22..... | 31 | 38 ¹ / ₈ | 54 ¹ / ₈ | 47 ⁵ / ₁₆ | 58 ⁹ / ₁₆ | 50 ¹ / ₈ | 23 ³ / ₈ | 15 ³ / ₄ | 20 ⁵ / ₈ | 13 | 9" |
| B 22..... | " | " | 59 ⁷ / ₁₆ | 51 ¹ / ₈ | 63 ¹ / ₁₆ | 55 ⁷ / ₁₆ | " | " | " | " | 9" |
| C 22..... | " | " | 63 ¹ / ₈ | 56 ³ / ₁₆ | 67 ⁷ / ₁₆ | 59 ¹ / ₈ | " | " | " | " | 9" |
| A 25..... | 31 ¹ / ₈ | 43 ¹ / ₈ | 55 ³ / ₄ | 47 ⁵ / ₈ | 60 ⁵ / ₈ | 52 ¹ / ₂ | 24 ³ / ₈ | 16 ¹ / ₄ | 21 ¹ / ₈ | " | 10" |
| B 25..... | " | " | 60 ¹ / ₈ | 52 | 65 | 56 ⁷ / ₈ | " | " | " | " | 10" |
| C 25..... | " | " | 64 ¹ / ₂ | 56 ³ / ₈ | 69 ³ / ₈ | 61 ¹ / ₄ | " | " | " | " | 10" |
| A 28..... | 37 ⁵ / ₈ | 46 ³ / ₄ | 56 ³ / ₈ | 48 | 61 | 52 ⁵ / ₈ | 24 ⁵ / ₈ | " | 21 ³ / ₈ | " | 11" |
| B 28..... | " | " | 61 | 52 ⁵ / ₈ | 65 ⁵ / ₈ | 57 ¹ / ₄ | " | " | " | " | 11" |
| C 28..... | " | " | 65 ⁵ / ₈ | 57 ¹ / ₄ | 70 ¹ / ₄ | 61 ⁷ / ₈ | " | " | " | " | 11" |
| A 31..... | 40 ¹ / ₄ | 49 ¹ / ₂ | 57 ¹ / ₂ | 48 | 63 ³ / ₄ | 54 ¹ / ₄ | 25 ⁷ / ₈ | 16 ³ / ₈ | 22 ¹ / ₂ | " | 12" |
| B 31..... | " | " | 62 ¹ / ₈ | 52 ⁵ / ₈ | 68 ³ / ₈ | 58 ⁷ / ₈ | " | " | " | " | 12" |
| C 31..... | " | " | 65 ³ / ₄ | 57 ¹ / ₄ | 73 | 63 ¹ / ₂ | " | " | " | " | 12" |
| A 34..... | 43 ¹ / ₈ | 53 ¹ / ₂ | 58 ¹ / ₄ | 48 ³ / ₈ | 65 ¹ / ₄ | 55 ³ / ₈ | 26 ³ / ₈ | 16 ¹ / ₂ | 27 ⁷ / ₈ | " | 13" |
| B 34..... | " | " | 62 ⁷ / ₈ | 53 | 69 ⁷ / ₈ | 60 | " | " | " | " | 13" |
| C 34..... | " | " | 67 ¹ / ₂ | 57 ⁵ / ₈ | 74 ¹ / ₂ | 64 ⁵ / ₈ | " | " | " | " | 13" |

Ideal Arco Water Boilers



For Guarantee and Coverings, Rating Conditions, Coils, etc., see page 68.

Ideal Arco Water Boilers

LIST PRICES, NET RATINGS AND DIMENSIONS

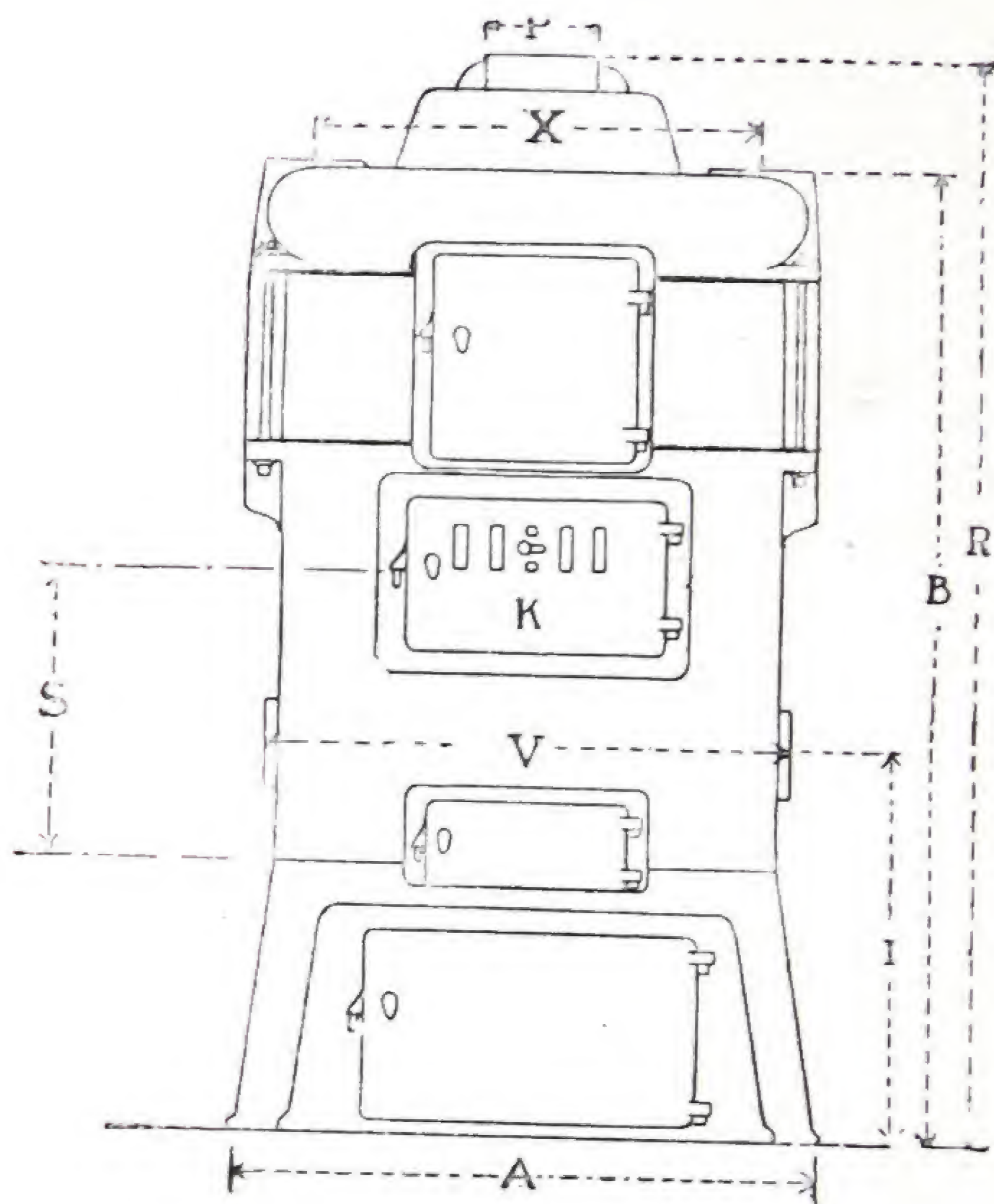
| Standard Number | Arco Number | List Price | Net Rating Square Feet | Diameter of Grate, Inches | Height over all Inches | Height to Top Outlet Inches | Height to Centre of Return Inches | Number and Size of Outlets and Inlets | Size of Smoke Pipe, Inches | Approx. Shipping Weight, Lbs. |
|-----------------|-------------|------------|------------------------|---------------------------|------------------------|-----------------------------|-----------------------------------|---------------------------------------|----------------------------|-------------------------------|
| 2 | 4-19-W | \$320.00 | 360 | 19 | 52 $\frac{5}{8}$ | 45 $\frac{7}{8}$ | 14 $\frac{3}{4}$ | 2-2 $\frac{1}{2}$ " | 8 | 900 |
| 2 $\frac{1}{2}$ | 5-19-W | 356.00 | 425 | 19 | 57 $\frac{1}{8}$ | 50 $\frac{3}{8}$ | 14 $\frac{3}{4}$ | 2-2 $\frac{1}{2}$ " | 8 | 1000 |
| 3 | 4-22-W | 382.00 | 500 | 22 | 55 $\frac{5}{8}$ | 47 $\frac{5}{8}$ | 15 $\frac{3}{4}$ | 2-3" | 9 | 1150 |
| 3 $\frac{1}{2}$ | 5-22-W | 425.00 | 575 | 22 | 60 | 52 | 15 $\frac{3}{4}$ | 2-3" | 9 | 1275 |
| 4 | 4-25-W | 462.00 | 675 | 25 | 56 $\frac{1}{4}$ | 48 $\frac{3}{4}$ | 16 $\frac{1}{4}$ | 2-4" | 9 | 1350 |
| 4 $\frac{1}{2}$ | 5-25-W | 498.00 | 750 | 25 | 61 | 53 $\frac{1}{2}$ | 16 $\frac{1}{4}$ | 2-4" | 9 | 1500 |
| 5 | 4-28-W | 550.00 | 825 | 28 | 59 $\frac{1}{2}$ | 50 $\frac{3}{4}$ | 16 $\frac{3}{8}$ | 2-4" | 10 | 1675 |
| 5 $\frac{1}{2}$ | 5-28-W | 590.00 | 925 | 28 | 64 $\frac{1}{2}$ | 55 $\frac{3}{4}$ | 16 $\frac{3}{8}$ | 2-4" | 10 | 1875 |
| 6 | 4-31-W | 654.00 | 1050 | 31 | 61 $\frac{5}{8}$ | 53 $\frac{1}{8}$ | 16 $\frac{1}{4}$ | 2-4" | 10 | 1950 |
| 6 $\frac{1}{2}$ | 5-31-W | 775.00 | 1250 | 31 | 66 $\frac{3}{4}$ | 58 $\frac{1}{4}$ | 16 $\frac{1}{4}$ | 2-4" | 10 | 2225 |
| 7 | 4-34-W | 880.00 | 1450 | 34 | 63 $\frac{5}{8}$ | 54 $\frac{1}{4}$ | 17 | 2-5" | 11 | 2300 |
| 7 $\frac{1}{2}$ | 5-34-W | 945.00 | 1700 | 34 | 69 | 59 $\frac{5}{8}$ | 17 | 2-5" | 11 | 2550 |
| 8 | 6-34-W | 1052.00 | 1950 | 34 | 74 $\frac{5}{8}$ | 65 $\frac{1}{4}$ | 17 | 2-5" | 11 | 2825 |

For Rating Conditions, see page 68.

For further measurements, see pages 18 and 19.

For information required for ordering Boiler and Boiler repairs see page 69.

Ideal Arco Water Boiler Measurements



See page 19

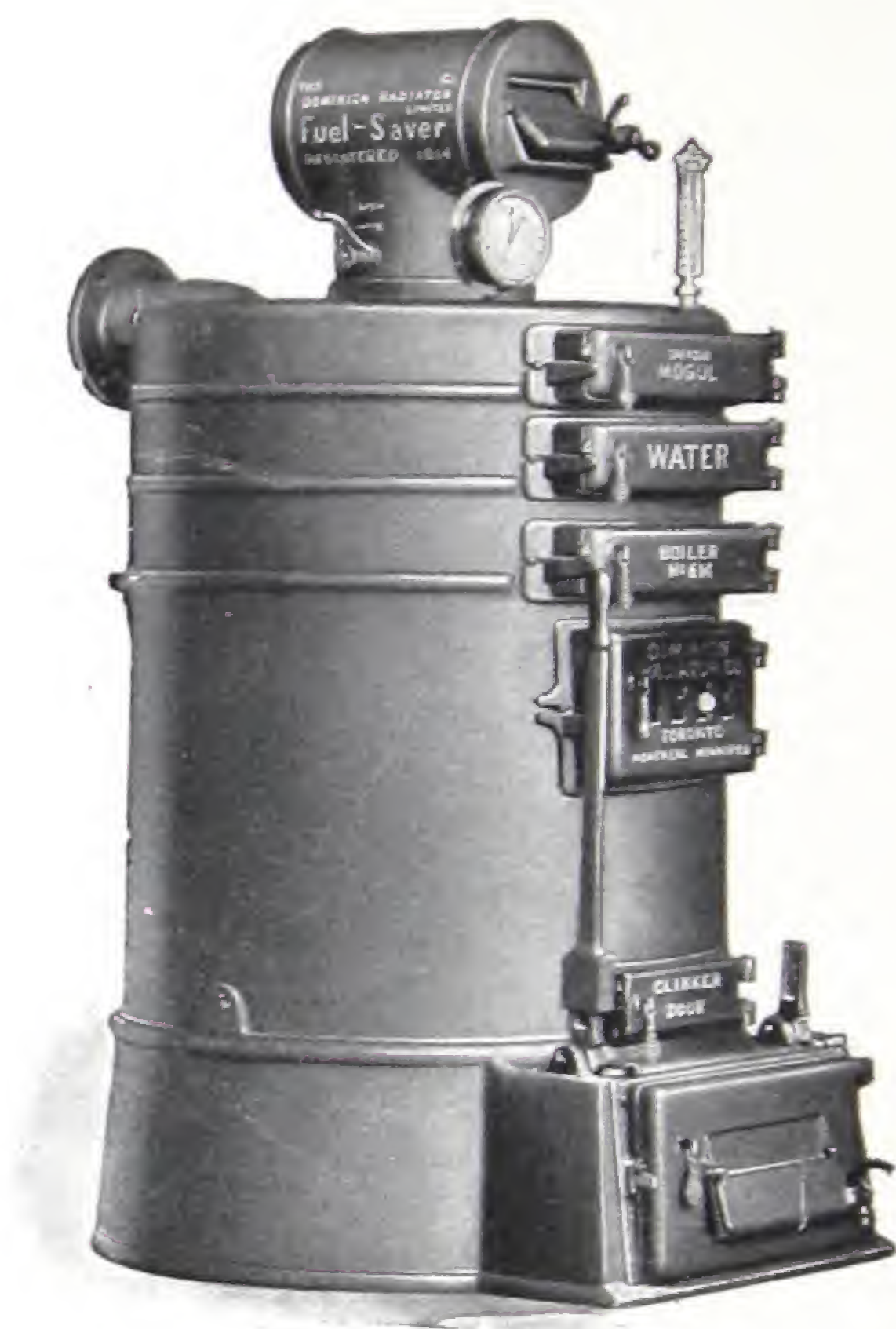
Ideal Arco Water Boilers

WATER—Measurements are in Inches

| | A | B | I | K | P | R | S | V | X |
|--------|------------------|------------------|-------------------|-----------------------------------|----|------------------|--------------------|--------------------|------------------|
| 4-19-W | 27 | 45 $\frac{7}{8}$ | 16 $\frac{1}{4}$ | 8 $\frac{1}{2}$ x11 $\frac{3}{4}$ | 8 | 52 $\frac{5}{8}$ | 15 $\frac{7}{8}$ | 24 $\frac{1}{8}$ | 19 $\frac{1}{4}$ |
| 5-19-W | 27 | 50 $\frac{3}{8}$ | 16 $\frac{1}{4}$ | 8 $\frac{1}{2}$ x11 $\frac{3}{4}$ | 8 | 57 $\frac{1}{8}$ | 15 $\frac{7}{8}$ | 24 $\frac{1}{8}$ | 19 $\frac{1}{4}$ |
| 4-22-W | 30 $\frac{1}{8}$ | 47 $\frac{5}{8}$ | 16 $\frac{7}{8}$ | 9 x13 $\frac{1}{4}$ | 9 | 55 $\frac{5}{8}$ | 16 $\frac{3}{4}$ | 27 $\frac{17}{32}$ | 23 |
| 5-22-W | 30 $\frac{1}{8}$ | 52 | 16 $\frac{7}{8}$ | 9 x13 $\frac{1}{4}$ | 9 | 60 | 16 $\frac{3}{4}$ | 27 $\frac{17}{32}$ | 23 |
| 4-25-W | 33 $\frac{1}{8}$ | 48 $\frac{3}{4}$ | 17 | 9 x13 $\frac{1}{4}$ | 9 | 56 $\frac{1}{4}$ | 17 $\frac{1}{2}$ | 30 $\frac{1}{8}$ | 25 $\frac{1}{2}$ |
| 5-25-W | 33 $\frac{1}{8}$ | 53 $\frac{1}{2}$ | 17 | 9 x13 $\frac{1}{4}$ | 9 | 61 | 17 $\frac{1}{2}$ | 30 $\frac{1}{8}$ | 25 $\frac{1}{2}$ |
| 4-28-W | 36 $\frac{3}{4}$ | 50 $\frac{3}{4}$ | 17 $\frac{9}{16}$ | 9 $\frac{5}{8}$ x18 | 10 | 59 $\frac{1}{2}$ | 18 $\frac{5}{8}$ | 34 $\frac{1}{16}$ | 29 $\frac{3}{8}$ |
| 5-28-W | 36 $\frac{3}{4}$ | 55 $\frac{3}{4}$ | 17 $\frac{9}{16}$ | 9 $\frac{5}{8}$ x18 | 10 | 64 $\frac{1}{2}$ | 18 $\frac{5}{8}$ | 34 $\frac{1}{16}$ | 29 $\frac{3}{8}$ |
| 4-31-W | 39 $\frac{1}{8}$ | 53 $\frac{1}{8}$ | 16 $\frac{3}{4}$ | 9 $\frac{5}{8}$ x18 | 10 | 61 $\frac{5}{8}$ | 19 $\frac{5}{16}$ | 36 $\frac{7}{8}$ | 32 $\frac{1}{4}$ |
| 5-31-W | 39 $\frac{1}{8}$ | 58 $\frac{1}{4}$ | 16 $\frac{3}{4}$ | 9 $\frac{5}{8}$ x18 | 10 | 66 $\frac{3}{4}$ | 19 $\frac{5}{16}$ | 36 $\frac{7}{8}$ | 32 $\frac{1}{4}$ |
| 4-34-W | 42 | 54 $\frac{1}{4}$ | 17 $\frac{5}{16}$ | 9 $\frac{5}{8}$ x18 | 11 | 63 $\frac{5}{8}$ | 19 $\frac{13}{16}$ | 39 $\frac{27}{32}$ | 37 |
| 5-34-W | 42 | 59 $\frac{5}{8}$ | 17 $\frac{5}{16}$ | 9 $\frac{5}{8}$ x18 | 11 | 69 | 19 $\frac{13}{16}$ | 39 $\frac{27}{32}$ | 37 |
| 6-34-W | 42 | 65 $\frac{1}{4}$ | 17 $\frac{5}{16}$ | 9 $\frac{5}{8}$ x18 - | 11 | 74 $\frac{5}{8}$ | 19 $\frac{13}{16}$ | 39 $\frac{27}{32}$ | 37 |

IDEAL Boilers are so designed that any casting, whether round or square, may be taken through any door or opening which is not less than 2 feet 6 inches wide.

Mogul Round Hot-Water Boilers



Low Base—General View

NOTE—Altitude Gauge and Thermometer shown above not furnished with Mogul Boilers.

Mogul Round Hot-Water Boilers

List Prices and Data

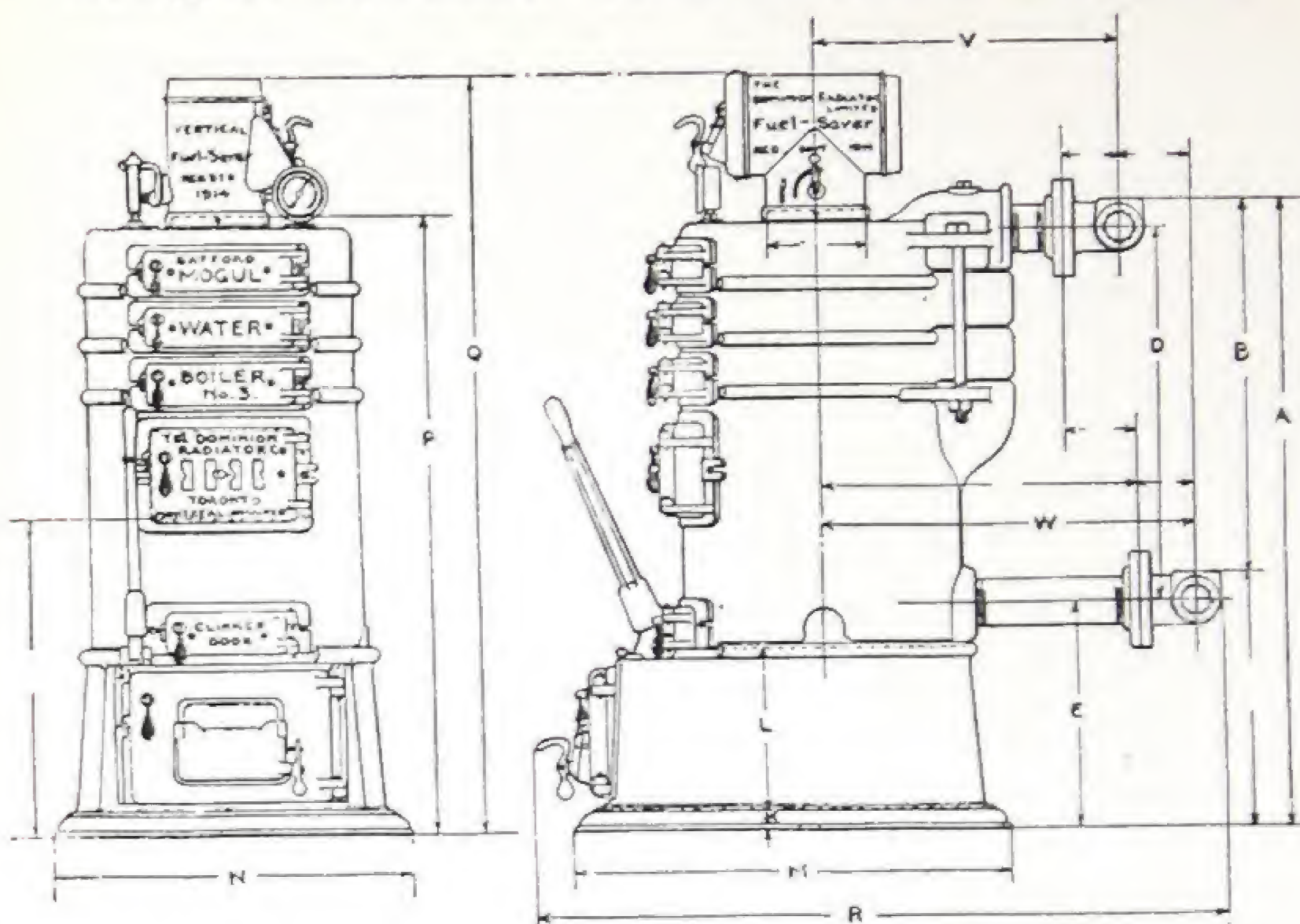
Information required for ordering Boilers and Boiler repairs, see page 69

| Size | List Price Low Base | List Price High Base | Gross Rating Square Feet | Net Rating Square Feet | Nominal Diam. of Grate | Area of Grate Square Feet | No. and Size Flow Openings | No. and size Return Open'gs | Size of Smoke Outlet |
|------|------------------------|-------------------------|-----------------------------|---------------------------|---------------------------|------------------------------|-------------------------------|--------------------------------|-------------------------|
| 1 | \$ 268.00 | \$ 302.00 | 375 | 250 | 17 | 1.50 | 4-2" | 4-2" | 7 |
| 1½ | 287.00 | 318.00 | 450 | 300 | 17 | 1.50 | 4-2" | 4-2" | 7 |
| 2 | 320.00 | 360.00 | 550 | 365 | 19 | 1.91 | 4-2" | 4-2" | 8 |
| 2½ | 356.00 | 395.00 | 625 | 420 | 19 | 1.91 | 4-2" | 4-2" | 8 |
| 3 | 382.00 | 425.00 | 750 | 500 | 22 | 2.58 | 5-2" | 4-2" | 9 |
| 3½ | 425.00 | 465.00 | 875 | 585 | 22 | 2.58 | 5-2" | 4-2" | 9 |
| 4 | 462.00 | 505.00 | 1,025 | 685 | 25 | 3.34 | 5-2" | 4-2" | 10 |
| 4½ | 498.00 | 545.00 | 1,125 | 750 | 25 | 3.34 | 5-2" | 4-2" | 10 |
| 5 | 550.00 | 603.00 | 1,250 | 835 | 28 | 4.58 | 4-2½" 3-2" | 4-2½" 2-2" | 10 |
| 5½ | 590.00 | 651.00 | 1,400 | 935 | 28 | 4.58 | | | 10 |
| 6 | 654.00 | 700.00 | 1,500 | 1,000 | 31 | 5.15 | | | 11 |
| 6½ | 775.00 | 842.00 | 1,875 | 1,250 | 32½ | 5.70 | 4-3" 4-2" | 4-3" 3-2" | 11 |
| 7 | 880.00 | 950.00 | 2,250 | 1,500 | 34 | 6.20 | | | 11 |
| 7½ | 945.00 | 1,017.00 | 2,650 | 1,765 | 34 | 6.20 | | | 11 |
| 8 | 1,052.00 | 1,160.00 | 3,000 | 2,000 | 37 | 7.36 | 4-3" 4-2" | 4-3" 3-2" | 12 |
| 8½ | 1,210.00 | 1,326.00 | 3,450 | 2,300 | 37 | 7.36 | | | 12 |
| 9 | 1,300.00 | 1,396.00 | 4,000 | 2,665 | 37 | 7.36 | | | 12 |

See note on Ratings, Guarantee and Coverings, page 68. Additional measurements, page 22. Where desired Safford Mogul Round Water Boilers Nos. 3-M to 9-M can be furnished with Special Headers having four 4" flow outlets and four 4" return inlets. These Headers should be described on orders as "Western Headers."

The Manufacture of Bottom Base Plates, on sizes 1 to 4 is discontinued, but where required, will be supplied at following lists:—Nos. 1 and 1½, \$15.00, Nos. 2 and 2½, \$18.00, Nos. 3 and 3½, \$24.00. Subject to same discount as Boilers.

Mogul Round Hot-Water Boilers



Front View—Low Base

Side View—Low Base

See Note on Ratings and Guarantee and Coverings, page 69. Measurements, pages 24, 25.

Where desired Safford Mogul Round Water Boilers, Nos. 3-M to 9-M can be furnished with Special Headers, having 4-4 in. flow outlets and 4-4 in. return inlets. These Headers should be described on orders as "Western Headers."

| Size | Low Base Only | | Low Base Only | Low Base Only | | Low Base Only | | | | | Outside Diam. of Fire-Pot | Outside Depth of Fire-Pot | Size of Connections Boiler to Headers | Size of Barrel of Header |
|-------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|---------------------------------------|--------------------------|
| | A | B-D | E | L | N | P | Q | R | V | W | | | | |
| 1 | 44 | 26 ³ / ₄ | 14 ³ / ₄ | 11 ¹ / ₂ | 22 ³ / ₄ | 42 ³ / ₄ | 53 ¹ / ₂ | 50 | 21 ¹ / ₂ | 26 ¹ / ₂ | 19 ³ / ₄ | 18 | 3" | 3" |
| 1 ¹ / ₂ | 48 | 30 ³ / ₄ | 14 ³ / ₄ | 11 ¹ / ₂ | 22 ³ / ₄ | 46 ³ / ₄ | 57 ¹ / ₂ | 50 | 21 ¹ / ₂ | 26 ¹ / ₂ | 19 ³ / ₄ | 18 | 3" | 3" |
| 2 | 44 ⁵ / ₈ | 27 ¹ / ₂ | 14 ³ / ₄ | 11 ¹ / ₂ | 24 ³ / ₄ | 43 ¹ / ₄ | 55 | 51 | 22 ¹ / ₂ | 27 ¹ / ₂ | 22 | 18 ¹ / ₂ | 3" | 3" |
| 2 ¹ / ₂ | 48 ⁵ / ₈ | 31 ¹ / ₂ | 14 ³ / ₄ | 11 ¹ / ₂ | 24 ³ / ₄ | 47 ¹ / ₄ | 59 | 51 | 22 ¹ / ₂ | 27 ¹ / ₂ | 22 | 18 ¹ / ₂ | 3" | 3" |
| 3 | 48 ¹ / ₄ | 30 | 15 ³ / ₄ | 12 | 28 ¹ / ₄ | 47 | 59 ¹ / ₂ | 54 ¹ / ₂ | 24 ¹ / ₄ | 29 ¹ / ₄ | 25 | 20 | 4" | 3" |
| 3 ¹ / ₂ | 52 ³ / ₄ | 34 ¹ / ₂ | 15 ³ / ₄ | 12 | 28 ¹ / ₄ | 51 ¹ / ₂ | 64 | 54 ¹ / ₂ | 24 ¹ / ₄ | 29 ¹ / ₄ | 25 | 20 | 4" | 3" |
| 4 | 51 ¹ / ₂ | 33 | 16 | 12 | 31 ¹ / ₂ | 50 ¹ / ₂ | 64 ³ / ₄ | 56 ¹ / ₂ | 24 ¹ / ₂ | 29 ¹ / ₂ | 28 | 23 | 4" | 4" |
| 4 ¹ / ₂ | 56 | 37 ¹ / ₂ | 16 | 12 | 31 ¹ / ₂ | 55 | 69 ¹ / ₄ | 56 ¹ / ₂ | 24 ¹ / ₂ | 29 ¹ / ₂ | 28 | 23 | 4" | 4" |
| 5 | 54 ³ / ₄ | 34 ³ / ₄ | 17 ¹ / ₂ | 13 | 34 ³ / ₄ | 54 ¹ / ₄ | 68 | 62 | 26 ³ / ₄ | 31 ³ / ₄ | 31 ¹ / ₄ | 24 | 5" | 4" |
| 5 ¹ / ₂ | 59 ³ / ₄ | 39 ³ / ₄ | 17 ¹ / ₂ | 13 | 34 ³ / ₄ | 59 ¹ / ₄ | 73 | 62 | 26 ³ / ₄ | 31 ³ / ₄ | 31 ¹ / ₄ | 24 | 5" | 4" |
| 6 | 56 | 35 ³ / ₄ | 17 ¹ / ₂ | 13 | 39 | 55 ¹ / ₄ | 70 ³ / ₄ | 65 | 28 ¹ / ₄ | 33 ¹ / ₄ | 34 ¹ / ₄ | 25 | 5" | 5" |
| 6 ¹ / ₂ | 56 | 35 ³ / ₄ | 18 | 13 | 40 ¹ / ₂ | 55 ¹ / ₄ | 70 ³ / ₄ | 66 ¹ / ₂ | 29 | 34 | 35 ³ / ₄ | 25 | 5" | 5" |
| 7 | 56 ³ / ₄ | 35 ⁵ / ₈ | 18 ¹ / ₄ | 13 | 42 | 55 ³ / ₄ | 71 ¹ / ₄ | 69 | 30 ¹ / ₂ | 35 ¹ / ₂ | 37 ¹ / ₄ | 25 ¹ / ₂ | 6" | 5" |
| 7 ¹ / ₂ | 61 ³ / ₄ | 40 ⁵ / ₈ | 18 ¹ / ₄ | 13 | 42 | 60 ³ / ₄ | 76 ¹ / ₄ | 69 | 30 ¹ / ₂ | 35 ¹ / ₂ | 37 ¹ / ₄ | 25 ¹ / ₂ | 6" | 5" |
| 8 | 57 ¹ / ₂ | 36 ¹ / ₈ | 18 ¹ / ₄ | 13 | 45 | 56 ¹ / ₂ | 72 ¹ / ₂ | 73 | 32 | 37 | 40 ¹ / ₄ | 26 | 6" | 6" |
| 8 ¹ / ₂ | 62 ¹ / ₂ | 41 ¹ / ₈ | 18 ¹ / ₄ | 13 | 45 | 61 ¹ / ₂ | 77 ¹ / ₂ | 73 | 32 | 37 | 40 ¹ / ₄ | 26 | 6" | 6" |
| 9 | 67 ¹ / ₂ | 46 ¹ / ₈ | 18 ¹ / ₄ | 13 | 45 | 66 ¹ / ₂ | 82 ¹ / ₂ | 73 | 32 | 37 | 40 ¹ / ₄ | 26 | 6" | 6" |

Ideal Boiler Flue Brushes



No. 1

3 1/4" x 1 3/8" x 4"
For Arco and Mogul Boilers



No. 2

3 3/4" x 2" x 5"
For Sectional Boilers
19"-22"-25"-28"-36"
Ideal Down Draft
34" and 48"



No. 3

4 1/2" x 2 3/4" x 6"
For 48" sectional
Boilers and 60" and 90"
Down Draft Boilers



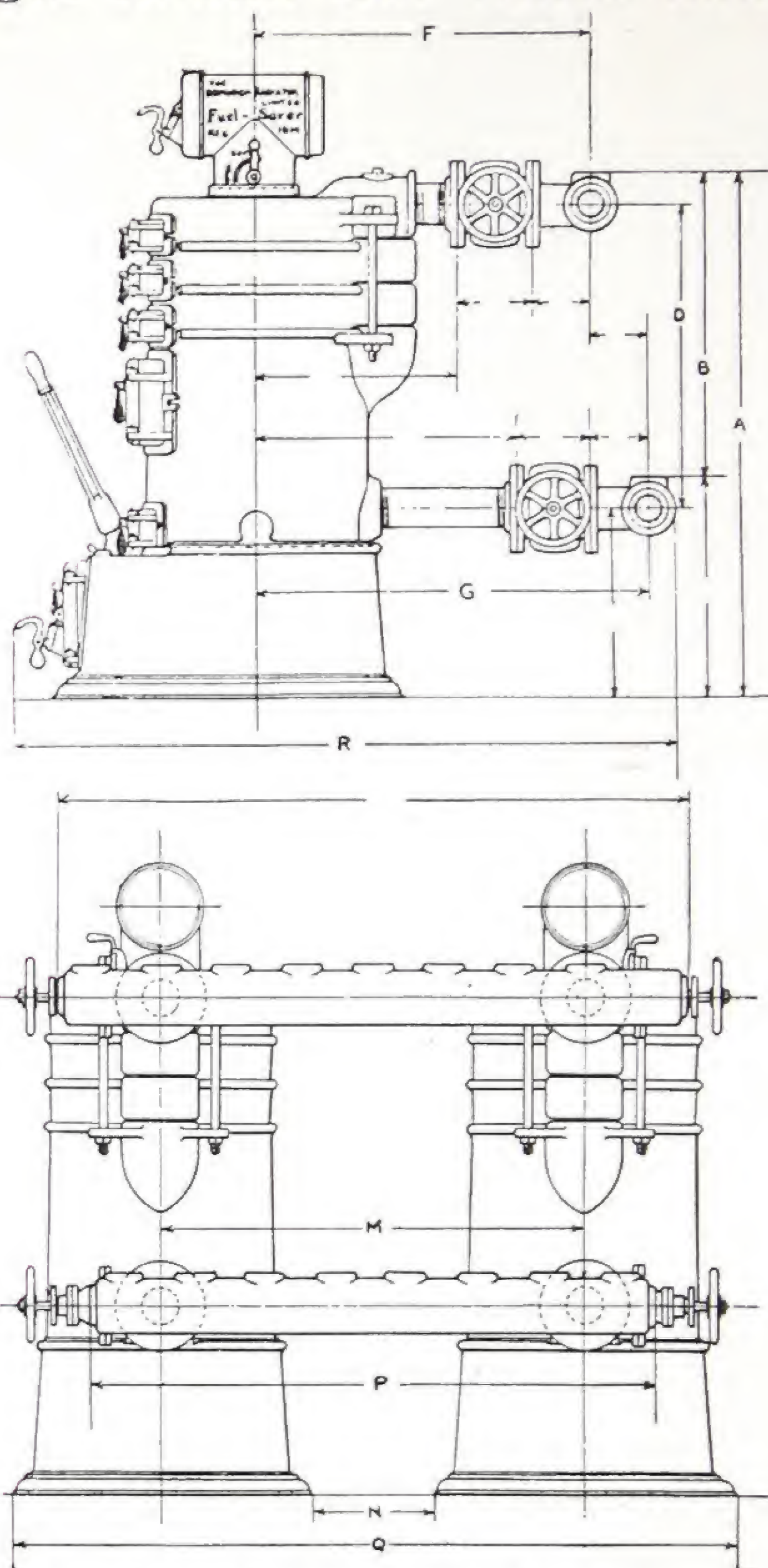
Fits Back Post Boilers



Fits Mogul Boilers

| Arco Round Boilers | | | Mogul Boilers | | |
|----------------------|--------|------------|--|--------|------------|
| No. 4-19 to No. 5-25 | \$4.00 | List Price | No. 1—1 1/2 | \$2.50 | List Price |
| " 4-28 to " 5-34 | 5.00 | " " | " 2—3 1/2 | 3.50 | " " |
| | | | " 4—6 | 4.25 | " " |
| | | | " 6—9 | 5.50 | " " |
| Bungalow Heaters | | | Triumph and Safford Water Boilers Old Style Series "A" and "C" | | |
| Ideal Bungalow | \$3.50 | List Price | No. 85 | \$5.50 | List Price |
| Safford Bungalow | 2.50 | " " | " 86 | 4.50 | " " |

Mogul Round Hot-Water Boilers



Twin Connections and Valves

No allowance will be made for ordinary Headers. See additional measurements. page 25.

Allowance for Valves when not Required

| | | |
|--------|------------|------------------|
| Nos. 1 | -M to 2½-M | \$10.00 each net |
| Nos. 3 | -M to 4½-M | 15.00 each net |
| Nos. 5 | -M to 6 -M | 18.00 each net |
| No. 6½ | -M | 24.00 each net |
| Nos. 7 | -M to 7½-M | 28.00 each net |
| Nos. 8 | -M to 9 -M | 28.00 each net |

Note.—When a larger and smaller size Boiler are connected together, use list on Headers for larger size.

Mogul Round Hot-Water Boilers

LIST PRICES AND DATA

Twin, Triple and Quadruple Connections.

| No. of Boiler | Price List of Connections Including Valves | | | Inside Diameter of Headers | | | No. and Sizes of Valves | | |
|---------------------|--|----------|----------|-------------------------------|--------|-------|----------------------------|--------|-------|
| | Twin | Triple | Quad. | Twin | Triple | Quad. | Twin | Triple | Quad. |
| 2 -M | \$145.00 | \$210.00 | \$290.00 | 4" | 5" | 6" | 4-3" | 6-3" | 8-3" |
| 2 1/2-M | 145.00 | 210.00 | 290.00 | 4" | 5" | 6" | 4-3" | 6-3" | 8-3" |
| 3 -M | 145.00 | 210.00 | 290.00 | 5" | 6" | 7" | 4-4" | 6-4" | 8-4" |
| 3 1/2-M | 145.00 | 210.00 | 290.00 | 5" | 6" | 7" | 4-4" | 6-4" | 8-4" |
| 4 -M | 145.00 | 210.00 | 290.00 | 5" | 6" | 7" | 4-4" | 6-4" | 8-4" |
| 4 1/2-M | 145.00 | 210.00 | 290.00 | 5" | 6" | 7" | 4-4" | 6-4" | 8-4" |
| 5 -M | 200.00 | 290.00 | 400.00 | 6" | 7" | 8" | 4-5" | 6-5" | 8-5" |
| 5 1/2-M | 200.00 | 290.00 | 400.00 | 6" | 7" | 8" | 4-5" | 6-5" | 8-5" |
| 6 -M | 200.00 | 290.00 | 400.00 | 6" | 7" | 8" | 4-5" | 6-5" | 8-5" |
| 6 1/2-M | 220.00 | 315.00 | ..... | 7" | 8" | .. | 4-5" | 6-5" | ..... |
| 7 -M | 280.00 | ..... | ..... | 8" | .. | .. | 4-6" | ..... | ..... |
| 7 1/2-M | 280.00 | ..... | ..... | 8" | .. | .. | 4-6" | ..... | ..... |
| 8 -M | 320.00 | ..... | ..... | 8" | .. | ... | 4-6" | ..... | ..... |
| 8 1/2-M | 320.00 | ..... | ..... | 8" | .. | ... | 4-6" | ..... | ..... |
| 9 -M | 450.00 | ..... | ..... | 8" | .. | ... | 4-6" | ..... | ..... |

Measurements—Twin Connections Only.

| No. of Boiler | Low Base | These Measurements are the same for Low and High Base Boilers | | | | | | |
|---------------------|-------------|--|--------|--------|----|--------|--------|--------|
| | A | B-D | F | G | R | M | N | Q |
| 2 -M | 44 5/8 | 27 1/2 | 30 | 36 1/2 | 61 | 34 1/4 | 9 1/2 | 59 |
| 2 1/2-M | 48 5/8 | 31 1/2 | 30 | 36 1/2 | 61 | 34 1/4 | 9 1/2 | 59 |
| 3 -M | 48 1/4 | 30 | 32 3/4 | 39 1/2 | 65 | 37 3/8 | 9 1/4 | 66 |
| 3 1/2-M | 52 3/4 | 34 1/2 | 32 3/4 | 39 1/2 | 65 | 37 3/8 | 9 1/4 | 66 |
| 4 -M | 51 1/2 | 33 | 33 3/4 | 40 1/2 | 68 | 42 | 10 1/2 | 73 1/2 |
| 4 1/2-M | 56 | 37 1/2 | 33 3/4 | 40 1/2 | 68 | 42 | 10 1/2 | 73 1/2 |
| 5 -M | 54 3/4 | 34 3/4 | 37 3/4 | 44 1/2 | 74 | 46 1/2 | 11 3/4 | 81 1/2 |
| 5 1/2-M | 59 3/4 | 39 3/4 | 37 3/4 | 44 1/2 | 74 | 46 1/2 | 11 3/4 | 81 1/2 |
| 6 -M | 56 | 35 3/4 | 40 | 46 1/2 | 78 | 49 1/2 | 10 1/2 | 88 1/2 |
| 6 1/2-M | 56 | 35 3/4 | 40 3/4 | 47 1/2 | 80 | 49 1/2 | 9 | 90 |
| 7 -M | 56 3/4 | 35 5/8 | 43 1/2 | 50 1/2 | 84 | 52 3/4 | 10 3/4 | 95 |
| 7 1/2-M | 61 3/4 | 40 5/8 | 43 1/2 | 50 1/2 | 84 | 52 3/4 | 10 3/4 | 95 |
| 8 -M | 57 1/2 | 36 1/8 | 45 3/4 | 53 | 88 | 55 3/4 | 10 3/4 | 100 |
| 8 1/2-M | 62 1/2 | 41 1/8 | 45 3/4 | 53 | 88 | 55 3/4 | 10 3/4 | 100 |
| 9 -M | 67 1/2 | 46 7/8 | 45 3/4 | 53 | 88 | 55 3/4 | 10 3/4 | 100 |

See Note on Ratings and Guarantee, page 69. Additional measurements, pages 22 and 24.

Where desired Safford Mogul Round Water Boilers Nos. 3-M to 9-M can be furnished with Special Headers having four 4" flow outlets and four 4" return inlets. These Headers should be described on orders as "Western Headers."

Note.—When ordering Twin Triple or Quadruple Headers for Boilers of different sizes, be sure to give location of boilers, as you face boilers, also sketch showing number and sizes of openings on headers.

Ideal and Safford Bungalow Heaters

FOR HEATING BUNGALOWS
COTTAGES AND APARTMENTS
BY HOT WATER



Ideal Bungalow Heater



Safford Bungalow Heater

For List Prices and Measurements see opposite page.

Ideal and Safford Bungalow Heaters

Most Simple to Run

The Ideal or Safford Bungalow Heater is in general purpose like a stove, as it heats the room in which it is placed. But is unlike a stove in that the spaces between its hollow or double walls are filled with water which, as heated, expands and circulates through connected piping to hot water radiators in adjoining rooms. The water rises as it is heated, and as it cools in the radiators (by parting with some of its warmth to the air of the rooms) the cooler and therefore heavier water returns to the Boiler to be reheated, over and over again. Hence the efficiency and economy. High winds cannot arrest, nor chilling cold offset its ample flow of warmth.

Ideal Bungalow Heaters

Sizes

| Net | Rooms | Net Capacity in Sq. Ft. of Radiation | Height | Diam. | Smoke Pipe | List Price with Base Plate |
|------|--------|--------------------------------------|--------------------|--------------------|------------|----------------------------|
| 04-B | 3 to 4 | 150 | 44 $\frac{1}{8}$ " | 18 $\frac{3}{4}$ " | 6" | \$132.00 |
| 05-B | 4 | 200 | 49 $\frac{5}{8}$ " | 18 $\frac{3}{4}$ " | 6" | 155.00 |
| 06-B | 5 | 325 | 51 $\frac{3}{4}$ " | 20 $\frac{1}{2}$ " | 6" | 176.00 |
| 07-B | 5 to 6 | 400 | 57 $\frac{1}{4}$ " | 20 $\frac{1}{2}$ " | 6" | 215.00 |
| 08-B | 6 | 525 | 51 $\frac{1}{2}$ " | 23 $\frac{1}{8}$ " | 7" | 225.00 |
| 09-B | 6 to 7 | 600 | 57 $\frac{7}{8}$ " | 23 $\frac{7}{8}$ " | 7" | 264.00 |

Safford Bungalow Heaters

Sizes

| No. | Rooms | Net Capacity in Sq. Ft. of Radiation | Height | Diam. | Smoke Pipe | List Price without Base Plate | List Price with Base Plate |
|------|--------|--------------------------------------|--------|--------------------|------------|-------------------------------|----------------------------|
| B-10 | 3 to 4 | 150 | 40" | 18 $\frac{1}{2}$ " | 6" | \$120.00 | \$132.00 |
| B-12 | 4 | 200 | 45" | 18 $\frac{1}{2}$ " | 6" | 143.00 | 155.00 |
| B-20 | 5 | 325 | 46" | 21" | 6" | 164.00 | 176.00 |
| B-22 | 5 to 6 | 400 | 52" | 21" | 6" | 203.00 | 215.00 |
| B-30 | 6 | 525 | 46" | 24 $\frac{1}{2}$ " | 7" | 210.00 | 225.00 |
| B-32 | 6 to 7 | 600 | 52" | 24 $\frac{1}{2}$ " | 7" | 249.00 | 264.00 |

Safford Bungalow Heaters Nos B-10 to B-32 will be regularly furnished without Bottom Base Plates unless otherwise ordered. Base Plates are required when the Heaters are set on wood or other inflammable floors.

Sirdar Steam Boiler

With Low Base



Style A-25-S

Ratings are based on using hard coal fuel.

If soft coal is to be used as fuel increase boiler one size over hard coal.

If Indirect or Vento radiation is to be used increase boiler capacity 75%.

Sirdar Steam Boiler

With Low Base

Data and List Prices

| Number | Diam. Grate | Height | Water Line | Diameter at Floor | Number of Openings | Smoke Pipe | Connecting Nipples | Gross Rating Sq. feet* | List Price |
|--------|----------------|------------------|------------------|----------------------|-----------------------|---------------|-----------------------|------------------------------|---------------|
| A-15-S | 15 | 47 $\frac{1}{2}$ | 40 $\frac{7}{8}$ | 23 $\frac{1}{4}$ | 1-2 | 7 | 4 $\frac{1}{2}$ | 200 | \$165.00 |
| B-15-S | 15 | 51 $\frac{1}{2}$ | 44 $\frac{1}{2}$ | 23 $\frac{1}{4}$ | 1-2 | 7 | 4 $\frac{1}{2}$ | 225 | 175.00 |
| A-17-S | 17 | 49 $\frac{1}{8}$ | 42 $\frac{1}{8}$ | 24 $\frac{7}{8}$ | 1-2 | 7 | 4 $\frac{1}{2}$ | 250 | 185.00 |
| B-17-S | 17 | 53 $\frac{1}{8}$ | 46 $\frac{1}{8}$ | 24 $\frac{7}{8}$ | 1-2 | 7 | 4 $\frac{1}{2}$ | 275 | 195.00 |
| C-17-S | 17 | 57 $\frac{1}{8}$ | 50 $\frac{1}{8}$ | 24 $\frac{7}{8}$ | 1-2 | 7 | 4 $\frac{1}{2}$ | 300 | 205.00 |
| A-19-S | 19 | 49 | 41 $\frac{3}{4}$ | 27 $\frac{1}{4}$ | 1-2 $\frac{1}{2}$ | 8 | 5 $\frac{1}{2}$ | 325 | 210.00 |
| B-19-S | 19 | 53 | 45 $\frac{3}{4}$ | 27 $\frac{1}{4}$ | 1-2 $\frac{1}{2}$ | 8 | 5 $\frac{1}{2}$ | 350 | 215.00 |
| C-19-S | 19 | 57 | 49 $\frac{3}{4}$ | 27 $\frac{1}{4}$ | 1-2 $\frac{1}{2}$ | 8 | 5 $\frac{1}{2}$ | 375 | 225.00 |
| A-22-S | 22 | 51 | 43 $\frac{3}{8}$ | 30 $\frac{1}{2}$ | 1-3 | 9 | 7 $\frac{1}{2}$ | 450 | 255.00 |
| B-22-S | 22 | 55 $\frac{3}{8}$ | 47 $\frac{3}{4}$ | 30 $\frac{1}{2}$ | 1-3 | 9 | 7 $\frac{1}{2}$ | 500 | 275.00 |
| C-22-S | 22 | 59 $\frac{3}{4}$ | 52 $\frac{1}{8}$ | 30 $\frac{1}{2}$ | 1-3 | 9 | 7 $\frac{1}{2}$ | 550 | 295.00 |
| A-25-S | 25 | 52 $\frac{1}{4}$ | 43 $\frac{1}{4}$ | 33 $\frac{1}{2}$ | 1-3 | 10 | 7 $\frac{1}{2}$ | 575 | 303.75 |
| B-25-S | 25 | 56 $\frac{5}{8}$ | 47 $\frac{5}{8}$ | 33 $\frac{1}{2}$ | 1-3 | 10 | 7 $\frac{1}{2}$ | 650 | 325.00 |
| C-25-S | 25 | 61 | 52 | 33 $\frac{1}{2}$ | 1-3 | 10 | 7 $\frac{1}{2}$ | 725 | 343.75 |
| A-28-S | 28 | 52 $\frac{5}{8}$ | 43 $\frac{3}{8}$ | 37 $\frac{1}{8}$ | 1-4 | 11 | 8 $\frac{1}{2}$ | 775 | 362.50 |
| B-28-S | 28 | 57 $\frac{1}{4}$ | 48 | 37 $\frac{1}{8}$ | 1-4 | 11 | 8 $\frac{1}{2}$ | 850 | 387.50 |
| C-28-S | 28 | 61 $\frac{7}{8}$ | 52 $\frac{5}{8}$ | 37 $\frac{1}{8}$ | 1-4 | 11 | 8 $\frac{1}{2}$ | 925 | 406.25 |
| A-31-S | 31 | 54 | 42 $\frac{7}{8}$ | 39 $\frac{3}{4}$ | 1-4 | 12 | 8 $\frac{1}{2}$ | 1000 | 425.00 |
| B-31-S | 31 | 58 $\frac{5}{8}$ | 47 $\frac{1}{2}$ | 39 $\frac{3}{4}$ | 1-4 | 12 | 8 $\frac{1}{2}$ | 1200 | 475.00 |
| C-31-S | 31 | 63 $\frac{1}{4}$ | 52 $\frac{1}{8}$ | 39 $\frac{3}{4}$ | 1-4 | 12 | 8 $\frac{1}{2}$ | 1350 | 512.50 |
| A-34-S | 34 | 54 $\frac{3}{4}$ | 43 $\frac{1}{4}$ | 42 $\frac{5}{8}$ | 1-5 | 13 | 9 $\frac{1}{2}$ | 1300 | 500.00 |
| B-34-S | 34 | 59 $\frac{3}{8}$ | 47 $\frac{7}{8}$ | 42 $\frac{5}{8}$ | 1-5 | 13 | 9 $\frac{1}{2}$ | 1500 | 550.00 |
| C-34-S | 34 | 64 | 52 $\frac{1}{2}$ | 42 $\frac{5}{8}$ | 1-5 | 13 | 9 $\frac{1}{2}$ | 1650 | 587.50 |

Boiler and flow and return mains should be covered to secure best results.

All trimmings and fire tools are supplied with boilers.

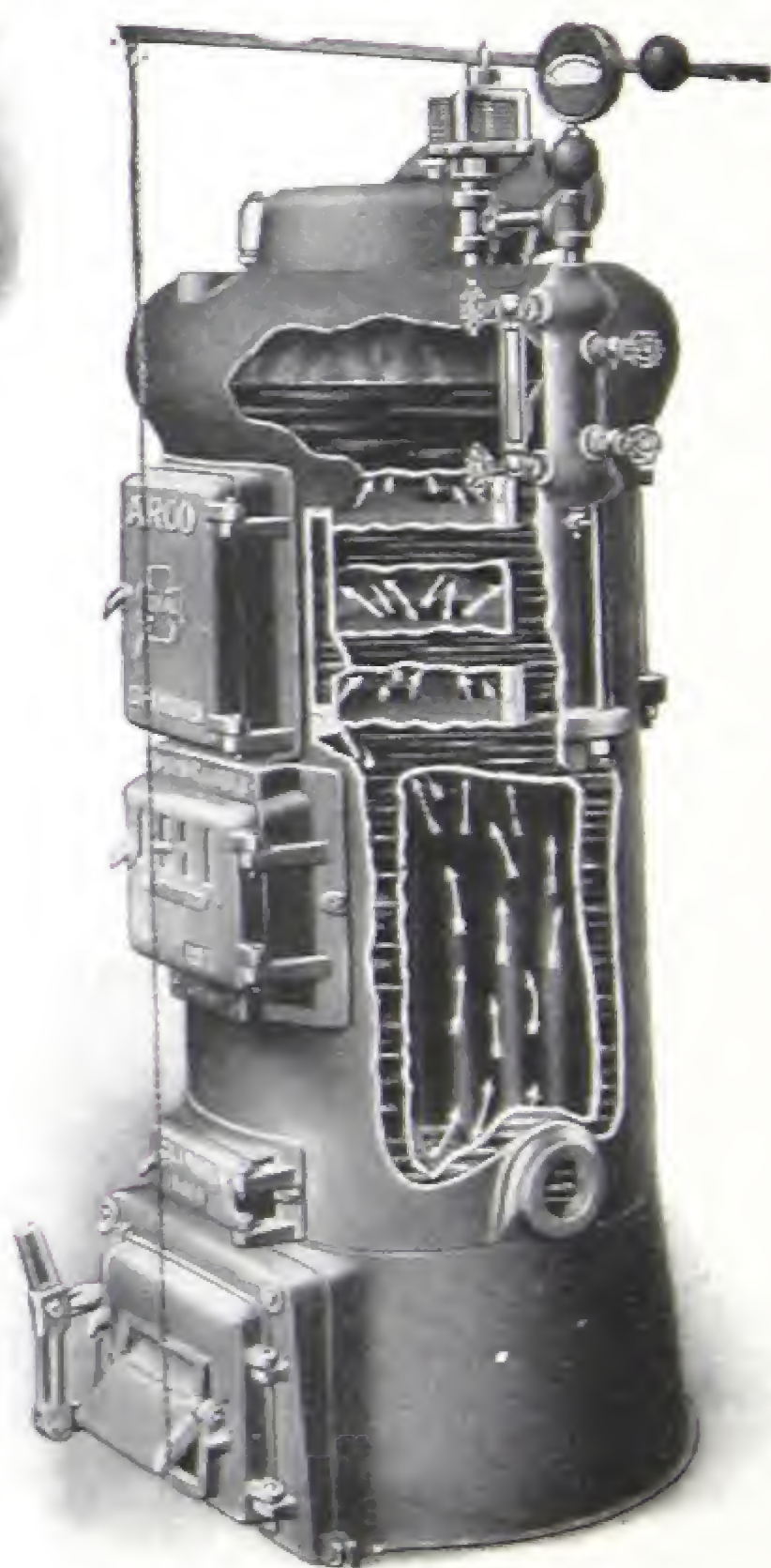
Letter "A" represents boiler without intermediate sections.

Letter "B" represents boiler with one intermediate section.

Letter "C" represents boiler with two intermediate sections.

For approximate shipping weight see page 57.

Ideal Arco and Safford Steam Boilers



For Guarantee and Coverings, Rating Conditions, Coils, etc., see page 68.

Ideal Arco and Safford Steam Boilers

List Prices, Ratings and Dimensions

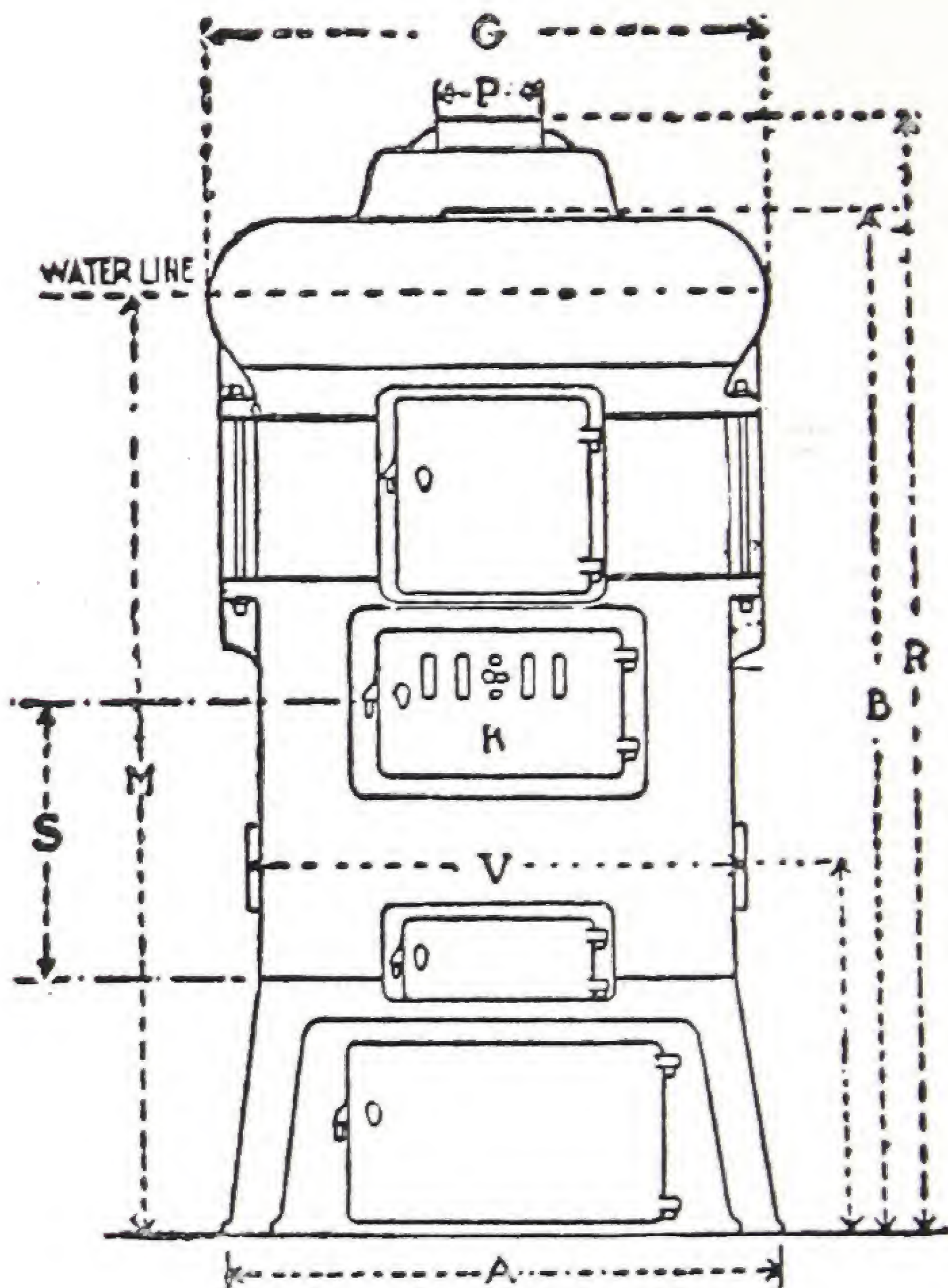
| No. | Price List | Gross Rating Square Feet | Diameter of Grate, Inches | Height to Top Outlet, Inches | Height to Centre of Return, Inches | Height of Water Line, Inches | Outlets Number and Size | Inlets Number and Size | Size of Smoke Pipe, Inches | Approx. Shipping Weight, Lbs. |
|--------|------------|-----------------------------|------------------------------|---------------------------------|---------------------------------------|---------------------------------|----------------------------|---------------------------|-------------------------------|----------------------------------|
| 4-19-S | \$205.00 | 300 | 19 | 52 1/2 | 14 3/4 | 45 1/2 | 1-2 1/2" | 2-2 1/2" | 8 | 1000 |
| 5-19-S | 215.00 | 350 | 19 | 57 | 14 3/4 | 50 | 1-2 1/2" | 2-2 1/2" | 8 | 1150 |
| 6-19-S | 235.00 | 400 | 19 | 61 5/8 | 14 3/4 | 54 5/8 | 1-2 1/2" | 2-2 1/2" | 8 | 1300 |
| 4-22-S | 255.00 | 450 | 22 | 54 | 15 3/4 | 47 | 1-3" | 2-3" | 9 | 1350 |
| 5-22-S | 295.00 | 525 | 22 | 58 1/2 | 15 3/4 | 51 1/2 | 1-3" | 2-3" | 9 | 1450 |
| 6-22-S | 312.50 | 575 | 22 | 63 1/4 | 15 3/4 | 56 1/4 | 1-3" | 2-3" | 9 | 1625 |
| 4-25-S | 295.00 | 550 | 25 | 55 5/8 | 16 1/4 | 47 7/8 | 1-4" | 2-4" | 9 | 1575 |
| 5-25-S | 325.00 | 625 | 25 | 60 1/4 | 16 1/4 | 52 1/2 | 1-4" | 2-4" | 9 | 1700 |
| 6-25-S | 337.50 | 700 | 25 | 65 3/8 | 16 1/4 | 57 5/8 | 1-4" | 2-4" | 9 | 1900 |
| 4-28-S | 375.00 | 800 | 28 | 57 5/8 | 16 3/8 | 49 1/4 | 1-4" | 2-4" | 10 | 1900 |
| 5-28-S | 400.00 | 900 | 28 | 62 5/8 | 16 3/8 | 54 1/4 | 1-4" | 2-4" | 10 | 2125 |
| 6-28-S | 425.00 | 1000 | 28 | 67 5/8 | 16 3/8 | 59 1/2 | 1-4" | 2-4" | 10 | 2400 |
| 4-31-S | 450.00 | 1100 | 31 | 59 3/4 | 16 1/4 | 51 | 1-4" | 2-4" | 10 | 2200 |
| 5-31-S | 500.00 | 1275 | 31 | 65 | 16 1/4 | 56 1/4 | 1-4" | 2-4" | 10 | 2450 |
| 6-31-S | 525.00 | 1400 | 31 | 70 3/8 | 16 1/4 | 61 5/8 | 1-4" | 2-4" | 10 | 2675 |
| 4-34-S | 500.00 | 1300 | 34 | 61 1/2 | 17 | 52 | 1-5" | 2-5" | 11 | 2550 |
| 5-34-S | 550.00 | 1500 | 34 | 67 | 17 | 57 1/2 | 1-5" | 2-5" | 11 | 2775 |
| 6-34-S | 587.50 | 1650 | 34 | 72 5/8 | 17 | 63 1/8 | 1-5" | 2-5" | 11 | 3100 |

For Rating Conditions, see page 68.

For further measurements, see pages 32 and 33.

For information required for ordering Boiler and Boiler repairs see page 69.

Ideal Arco and Safford Steam Boiler Measurements



See page 33.

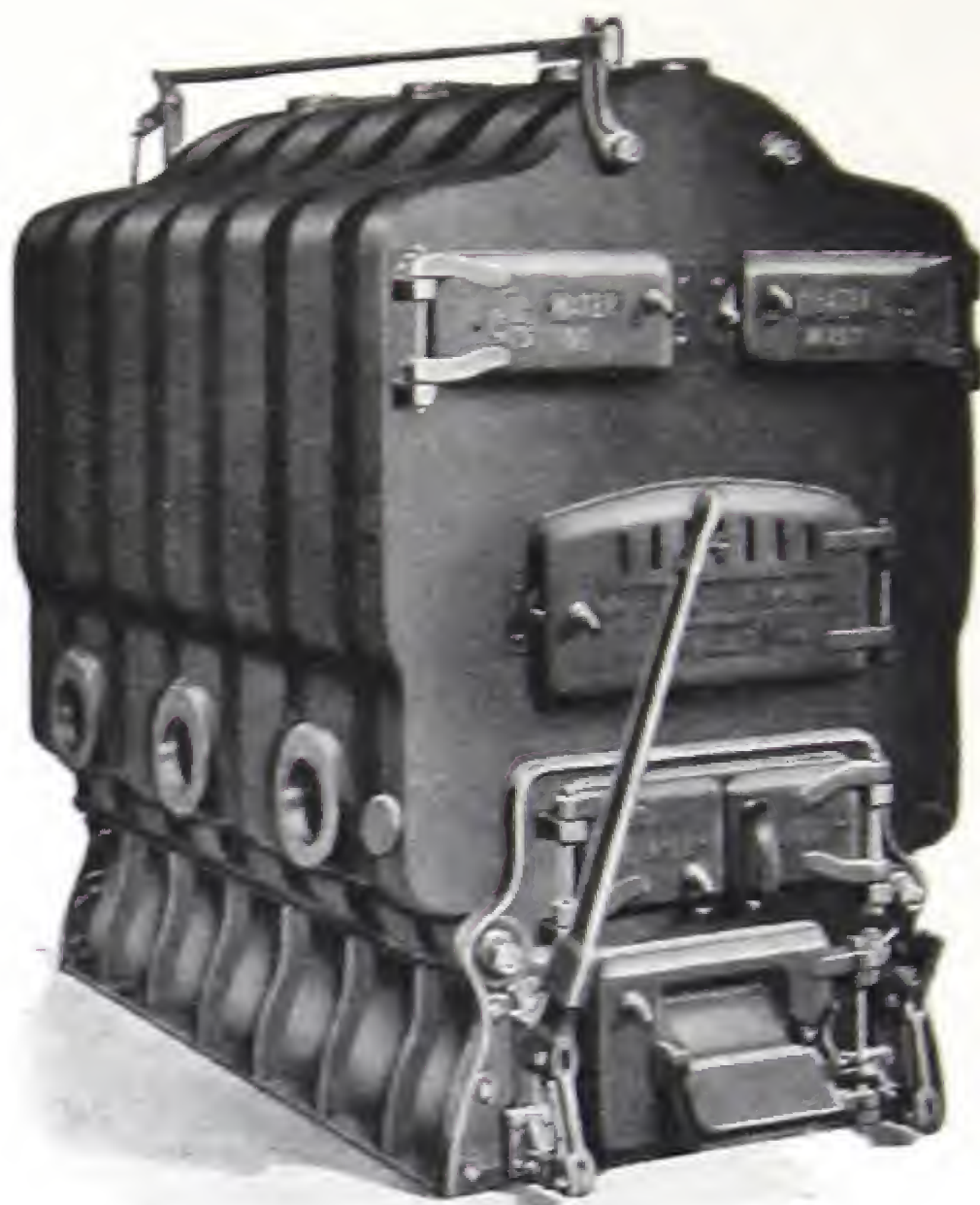
Ideal Arco and Safford Steam Boilers

STEAM—Measurements are in Inches

| | G | B | I | K | M | P | R | S | V |
|--------|-------------------|------------------|-------------------|-----------------------------------|------------------|----|------------------|--------------------|--------------------|
| 4-19-S | 26 $\frac{5}{8}$ | 52 $\frac{1}{2}$ | 16 $\frac{1}{4}$ | 8 $\frac{1}{2}$ x11 $\frac{3}{4}$ | 45 $\frac{1}{2}$ | 8 | 59 $\frac{5}{8}$ | 15 $\frac{7}{8}$ | 24 $\frac{1}{8}$ |
| 5-19-S | 26 $\frac{5}{8}$ | 57 | 16 $\frac{1}{4}$ | 8 $\frac{1}{2}$ x11 $\frac{3}{4}$ | 50 | 8 | 64 $\frac{1}{8}$ | 15 $\frac{7}{8}$ | 24 $\frac{1}{8}$ |
| 6-19-S | 26 $\frac{5}{8}$ | 61 $\frac{5}{8}$ | 16 $\frac{1}{4}$ | 8 $\frac{1}{2}$ x11 $\frac{3}{4}$ | 54 $\frac{5}{8}$ | 8 | 68 $\frac{3}{4}$ | 15 $\frac{7}{8}$ | 24 $\frac{1}{8}$ |
| 4-22-S | 30 $\frac{1}{4}$ | 54 | 16 $\frac{7}{8}$ | 9 x13 $\frac{1}{4}$ | 47 | 9 | 62 $\frac{1}{4}$ | 16 $\frac{3}{4}$ | 27 $\frac{1}{2}$ |
| 5-22-S | 30 $\frac{1}{4}$ | 58 $\frac{1}{2}$ | 16 $\frac{7}{8}$ | 9 x13 $\frac{1}{4}$ | 51 $\frac{1}{2}$ | 9 | 66 $\frac{3}{4}$ | 16 $\frac{3}{4}$ | 27 $\frac{1}{2}$ |
| 6-22-S | 30 $\frac{1}{4}$ | 63 $\frac{1}{4}$ | 16 $\frac{7}{8}$ | 9 x13 $\frac{1}{4}$ | 56 $\frac{1}{4}$ | 9 | 71 $\frac{1}{2}$ | 16 $\frac{3}{4}$ | 27 $\frac{1}{2}$ |
| 4-25-S | 32 $\frac{1}{2}$ | 55 $\frac{5}{8}$ | 17 | 9 x13 $\frac{1}{4}$ | 47 $\frac{7}{8}$ | 9 | 63 $\frac{3}{8}$ | 17 $\frac{1}{2}$ | 30 $\frac{1}{8}$ |
| 5-25-S | 32 $\frac{1}{2}$ | 60 $\frac{1}{4}$ | 17 | 9 x13 $\frac{1}{4}$ | 52 $\frac{1}{2}$ | 9 | 68 | 17 $\frac{1}{2}$ | 30 $\frac{1}{8}$ |
| 6-25-S | 32 $\frac{1}{2}$ | 65 $\frac{3}{8}$ | 17 | 9 x13 $\frac{1}{4}$ | 57 $\frac{5}{8}$ | 9 | 73 $\frac{1}{8}$ | 17 $\frac{1}{2}$ | 30 $\frac{1}{8}$ |
| 4-28-S | 36 $\frac{1}{2}$ | 57 $\frac{5}{8}$ | 17 $\frac{9}{16}$ | 9 $\frac{5}{8}$ x18 | 49 $\frac{1}{4}$ | 10 | 66 $\frac{5}{8}$ | 18 $\frac{5}{8}$ | 34 $\frac{1}{16}$ |
| 5-28-S | 36 $\frac{1}{2}$ | 62 $\frac{5}{8}$ | 17 $\frac{9}{16}$ | 9 $\frac{5}{8}$ x18 | 54 $\frac{1}{4}$ | 10 | 71 $\frac{5}{8}$ | 18 $\frac{5}{8}$ | 34 $\frac{1}{16}$ |
| 6-28-S | 36 $\frac{1}{2}$ | 67 $\frac{5}{8}$ | 17 $\frac{9}{16}$ | 9 $\frac{5}{8}$ x18 | 59 $\frac{1}{2}$ | 10 | 76 $\frac{7}{8}$ | 18 $\frac{5}{8}$ | 34 $\frac{1}{16}$ |
| 4-31-S | 40 $\frac{3}{8}$ | 59 $\frac{3}{4}$ | 16 $\frac{3}{4}$ | 9 $\frac{5}{8}$ x18 | 51 | 10 | 68 $\frac{5}{8}$ | 19 $\frac{5}{16}$ | 36 $\frac{7}{8}$ |
| 5-31-S | 40 $\frac{3}{8}$ | 65 | 16 $\frac{3}{4}$ | 9 $\frac{5}{8}$ x18 | 56 $\frac{1}{4}$ | 10 | 73 $\frac{7}{8}$ | 19 $\frac{5}{16}$ | 36 $\frac{7}{8}$ |
| 6-31-S | 40 $\frac{3}{8}$ | 70 $\frac{3}{8}$ | 16 $\frac{3}{4}$ | 9 $\frac{5}{8}$ x18 | 61 $\frac{5}{8}$ | 10 | 79 $\frac{1}{4}$ | 19 $\frac{5}{16}$ | 36 $\frac{7}{8}$ |
| 4-34-S | 45 $\frac{3}{16}$ | 61 $\frac{1}{2}$ | 17 $\frac{5}{16}$ | 9 $\frac{5}{8}$ x18 | 52 | 11 | 71 $\frac{1}{4}$ | 19 $\frac{13}{16}$ | 39 $\frac{27}{32}$ |
| 5-34-S | 45 $\frac{3}{16}$ | 67 | 17 $\frac{5}{16}$ | 9 $\frac{5}{8}$ x18 | 57 $\frac{1}{2}$ | 11 | 76 $\frac{3}{4}$ | 19 $\frac{13}{16}$ | 39 $\frac{27}{32}$ |
| 6-34-S | 45 $\frac{3}{16}$ | 72 $\frac{5}{8}$ | 17 $\frac{5}{16}$ | 9 $\frac{5}{8}$ x18 | 63 $\frac{1}{8}$ | 11 | 82 $\frac{3}{8}$ | 19 $\frac{13}{16}$ | 39 $\frac{27}{32}$ |

IDEAL Boilers are so designed that any casting, whether round or square, may be taken through any door or opening which is not less than 2 feet 6 inches wide.

Ideal Sectional 19-inch Water Boilers



No. W-19-7 Boiler

| No. Including Sec. | Length Total Inches | Grate Area Sq. ft. | Out-lets In. | Ash-Pit (Inside) Inches | Ship- ping Weight | *Gross Ratings Sq. ft. | List Price Complete |
|--------------------|---------------------|--------------------|--------------|-------------------------|----------------------|------------------------|---------------------|
| W-19-5 | 51 $\frac{3}{4}$ | 3.32 | 2-3 | 20x29 $\frac{1}{8}$ | 1850 | 1000 | \$287.50 |
| W-19-6 | 58 $\frac{3}{8}$ | 4.15 | 2-3 | 20x36 $\frac{5}{8}$ | 2150 | 1250 | 325.00 |
| W-19-7 | 65 | 4.98 | 3-3 | 20x43 $\frac{5}{8}$ | 2450 | 1500 | 375.00 |

Total Height.....50 inches
 Total Width.....31 $\frac{1}{4}$ inches
 Size of Smoke-Pipe.....9 inches

For Wood Burning. On special orders these Boilers are fitted with 10 $\frac{1}{4}$ x 18-inch fire-door opening and special grates.

For additional measurements, see pages 46 and 47.

For each supply outlet on top of Boiler there is a corresponding return inlet in either side.

Pea Coal grate can be supplied if required.

Ideal Sectional 19-inch Steam Boilers



No. S-19-7 Boiler

| No. Including Sec. | Length Total Inches | Grate Area Sq. ft. | Outlets In. | Gallons Water | Shipping Weight | *Gross Ratings Sq. ft. | List Price Complete |
|--------------------|---------------------|--------------------|-------------|---------------|-----------------|------------------------|---------------------|
| S-19-5 | 51 $\frac{3}{4}$ | 3.32 | 2-3 | 30 | 1925 | 600 | \$312.50 |
| S-19-6 | 58 $\frac{3}{8}$ | 4.15 | 2-3 | 36 | 2250 | 750 | 350.00 |
| S-19-7 | 65 | 4.98 | 3-3 | 42 | 2575 | 900 | 400.00 |

Height of Boilers, inclusive of trimmings.....55 $\frac{3}{4}$ inches
 Width of Boilers, inclusive of trimmings.....38 inches
 Height of Water Line.....43 $\frac{3}{8}$ inches
 Size of Smoke-Pipe.....9 inches

For Wood Burning. On special orders these Boilers are fitted with 10 $\frac{1}{4}$ x 18-inch fire-door opening and special grates.

For additional measurements, see pages 46 and 47.

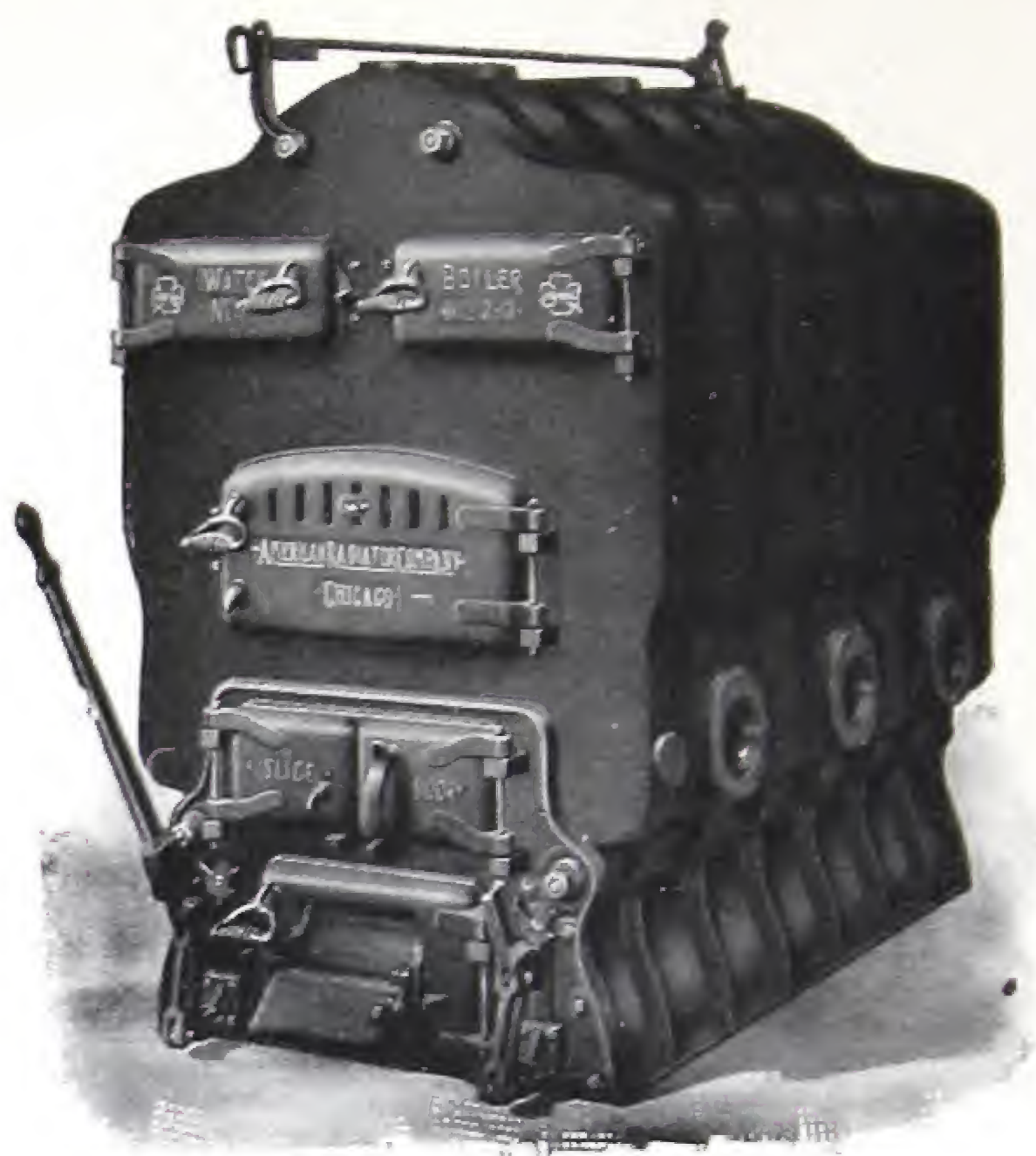
For each supply outlet on top of Boiler there is a corresponding return inlet in either side. Do not bush flow-pipe outlets—connect all of them full size to the main.

Mains and returns must be added to radiation to determine size of boiler required.

For direct-indirect radiation add 50% to determine boiler capacity.

For vento radiation add 75% to determine boiler capacity.

Ideal Sectional 22-inch Water Boilers



No. W-22-7 Boiler

| No. Including Sec. | Length Total Inches | Grate Area Sq. ft. | Out-lets In. | Ash Pit (Inside) Inches | Shipping Weight | *Gross Ratings Sq. Ft. | List Price Complete |
|--------------------|---------------------|--------------------|--------------|-------------------------------------|-----------------|------------------------|---------------------|
| W-22-5 | 53 $\frac{1}{4}$ | 4.08 | 2—4 | 23 $\frac{1}{8}$ x 31 $\frac{1}{8}$ | 2300 | 1300 | \$350.00 |
| W-22-6 | 60 $\frac{1}{4}$ | 5.10 | 2—4 | 23 $\frac{1}{8}$ x 38 $\frac{1}{8}$ | 2700 | 1650 | 400.00 |
| W-22-7 | 67 $\frac{1}{4}$ | 6.12 | 3—4 | 23 $\frac{1}{8}$ x 45 $\frac{1}{8}$ | 3100 | 2000 | 450.00 |

Total Height.....53 inches
 Total Width35 $\frac{1}{4}$ inches
 Size of Smoke-Pipe.....10 inches

For Wood Burning. On special orders these Boilers are fitted with 11 $\frac{1}{8}$ x 18-inch fire-door.

Mains and returns must be added to radiation to determine size boiler required.

Ratings are for hard coal. If soft coal or wood is used add one size to boiler capacity.

For additional measurements, see pages 46 and 47.

For each supply outlet on top of Boiler there is a corresponding return inlet in either side.

Ideal Sectional 22-inch Steam Boilers



No. S-22-7 Boiler

| No. In- cluding Sec. | Length Total Inches | Grate Area Sq. ft. | Out- lets In. | Gallons Water | Ship- ping Weight | *Gross Ratings Sq. ft. | List Price Com- plete |
|----------------------------|--------------------------------|--------------------------|---------------------|------------------|-------------------------|------------------------------|--------------------------------|
| S-22-5. | 53 ¹ / ₄ | 4.08 | 2—4 | 41 | 2400 | 800 | \$375.00 |
| S-22-6 | 60 ¹ / ₄ | 5.10 | 2—4 | 50 | 2825 | 1000 | |
| S-22-7 | 67 ¹ / ₄ | 6.12 | 3—4 | 57 | 3250 | 1200 | |

Height of Boilers, inclusive of trimmings.....59½ inches
Width of Boilers, inclusive of trimmings.....42 inches
Height of Water Line.....46¼ inches
Size of Smoke-Pipe.....10 inches

For Wood Burning. On special orders these Boilers are fitted with 11⅝ x 18-inch fire-door opening.

For additional measurements, see pages 46 and 47.

For each supply outlet on top of Boiler there is a corresponding return inlet in either side. Do not bush flow-pipe outlets—connect all of them full size to the main.

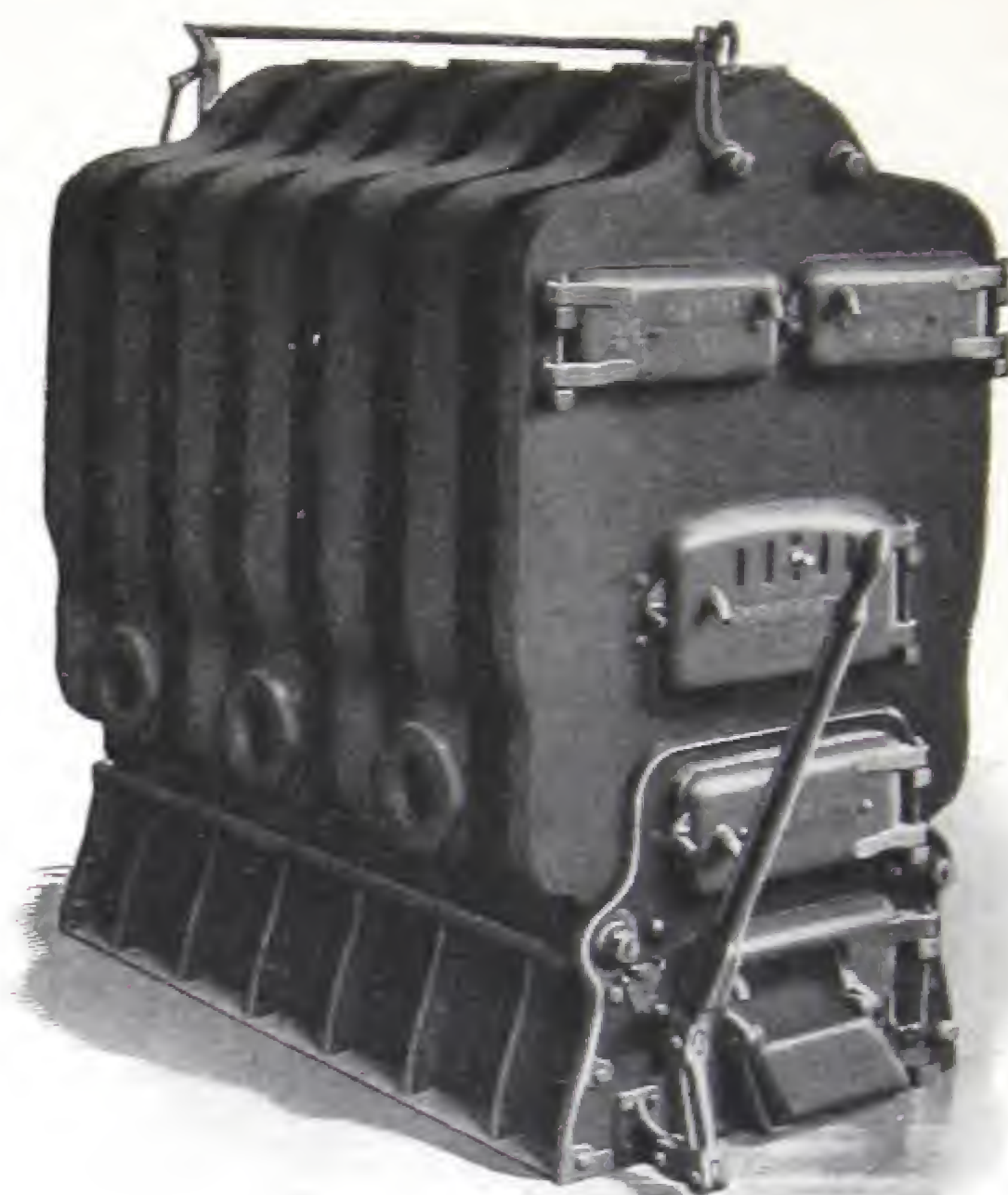
Ratings are for hard coal. If soft coal or wood is used increase boiler one size.

Mains and returns must be added to radiation to determine size boiler required.

If Direct-Indirect radiation is used add 50% to boiler capacity.

If Vento-Indirect radiation is used add 75% to boiler capacity.

Ideal Sectional 25-inch Water Boilers



No. W-25-7 Boiler

| No. Including Sec. | Length Total Inches | Grate Area Sq. ft. | Out-lets In. | Ash-Pit (Inside) Inches | Shipping Weight | *Gross Ratings Sq. ft. | List Price Complete |
|--------------------|---------------------|--------------------|--------------|-------------------------|-----------------|------------------------|---------------------|
| W-25-5 | 59 $\frac{1}{4}$ | 5.44 | 2—4 | 28x35 $\frac{3}{16}$ | 2875 | 1825 | \$425.00 |
| W-25-6 | 66 $\frac{7}{8}$ | 6.80 | 2—4 | 28x42 $\frac{7}{8}$ | 3375 | 2225 | 487.50 |
| W-25-7 | 74 $\frac{1}{2}$ | 8.16 | 3—4 | 28x50 $\frac{9}{16}$ | 3875 | 2650 | 550.00 |
| W-25-8 | 82 $\frac{1}{4}$ | 9.52 | 3—4 | 28x58 $\frac{1}{4}$ | 4325 | 3050 | 612.50 |

Total Height.....57 $\frac{7}{8}$ inches
 Total Width.....40 $\frac{3}{8}$ inches
 Size of Smoke-Pipe.....11 inches

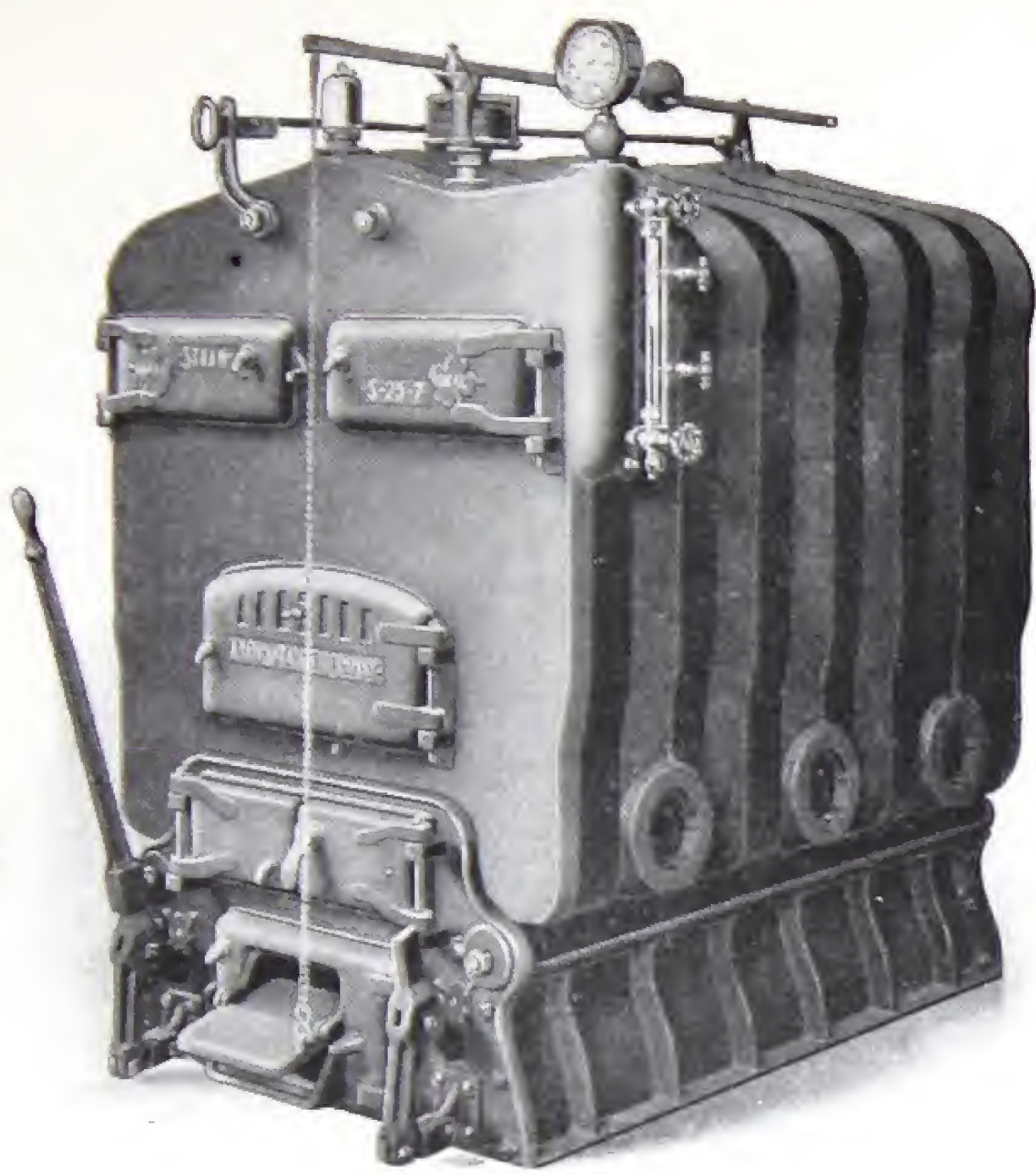
For Wood Burning. On special orders these Boilers are fitted with 11 $\frac{1}{8}$ x 18-inch fire-door opening and special grates.

For additional measurements, see pages 46 and 47.

For each supply outlet on top of Boiler there is a corresponding return inlet in either side.

Mains and returns must be added to radiating surface to determine size boiler required.

Ideal Sectional 25-inch Steam Boilers



No. S-25-7 Boiler

| No. Including Sec. | Length Total Inches | Grate Area Sq. ft. | Out-lets In. | Gallons Water | Ship-ping Weight | *Gross Ratings Sq. ft. | List Price Com-plete |
|--------------------|---------------------|--------------------|--------------|------------------|------------------|------------------------|----------------------|
| S-25-5 | 53 $\frac{1}{4}$ | 5.44 | 2—4 | 55 $\frac{1}{2}$ | 3000 | 1100 | \$450.00 |
| S-25-6 | 66 $\frac{7}{8}$ | 6.80 | 2—4 | 66 $\frac{1}{2}$ | 3500 | 1350 | 512.50 |
| S-25-7 | 74 $\frac{1}{2}$ | 8.16 | 3—4 | 78 $\frac{1}{2}$ | 4000 | 1600 | 575.00 |
| S-25-8 | 82 $\frac{1}{4}$ | 9.52 | 3—4 | 90 $\frac{1}{2}$ | 4500 | 1850 | 687.50 |

Height of Boilers, inclusive of trimmings.....64 $\frac{1}{8}$ inches
 Width of Boilers, inclusive of trimmings.....47 $\frac{1}{4}$ inches
 Height of Water Line.....51 inches
 Size of Smoke-Pipe.....11 inches

For Wood Burning. On special orders these Boilers are fitted with 11 $\frac{1}{8}$ x 18-inch fire-door opening and special grates.
 For additional measurements, see pages 46 and 47.
 For each supply outlet on top of Boiler there is a corresponding return inlet in either side. Do not bush flow-pipe outlets—connect all of them full size to the main.
 Mains and returns must be added to radiation to determine size boiler required.
 For direct-indirect radiation add 50% to determine boiler capacity.
 For vento radiation add 75% to determine boiler capacity.

Ideal Sectional 28-inch Water Boilers



No. W-28-7 Boiler

| No. Includ- ing Sec. | Length Total Inches | Grate Area Sq. ft. | Out- lets In. | Ash Pit (Inside) Inches | Ship- ping Weight | *Gross Ratings Sq. ft. | List Price Com- plete |
|----------------------------|---------------------------|--------------------------|---------------------|------------------------------------|-------------------------|------------------------------|--------------------------------|
| W-28-5 | 60 | 6.24 | 2-4 | 30 $\frac{5}{8}$ x35 $\frac{1}{2}$ | 3300 | 2150 | \$475.00 |
| W-28-6 | 68 | 7.80 | 2-4 | 30 $\frac{5}{8}$ x43 $\frac{1}{2}$ | 3875 | 2675 | 562.50 |
| W-28-7 | 76 | 9.36 | 3-4 | 30 $\frac{5}{8}$ x51 $\frac{1}{2}$ | 4450 | 3200 | 637.50 |
| W-28-8 | 84 | 10.92 | 3-4 | 30 $\frac{5}{8}$ x59 $\frac{1}{2}$ | 5025 | 3725 | 725.00 |

Total Height.....60 $\frac{5}{8}$ inches
 Total Width.....43 $\frac{1}{2}$ inches
 Size of Smoke-Pipe.....12 inches

For Wood Burning. On special order these Boilers are fitted with 12 $\frac{7}{8}$ x 20-inch fire-door opening.

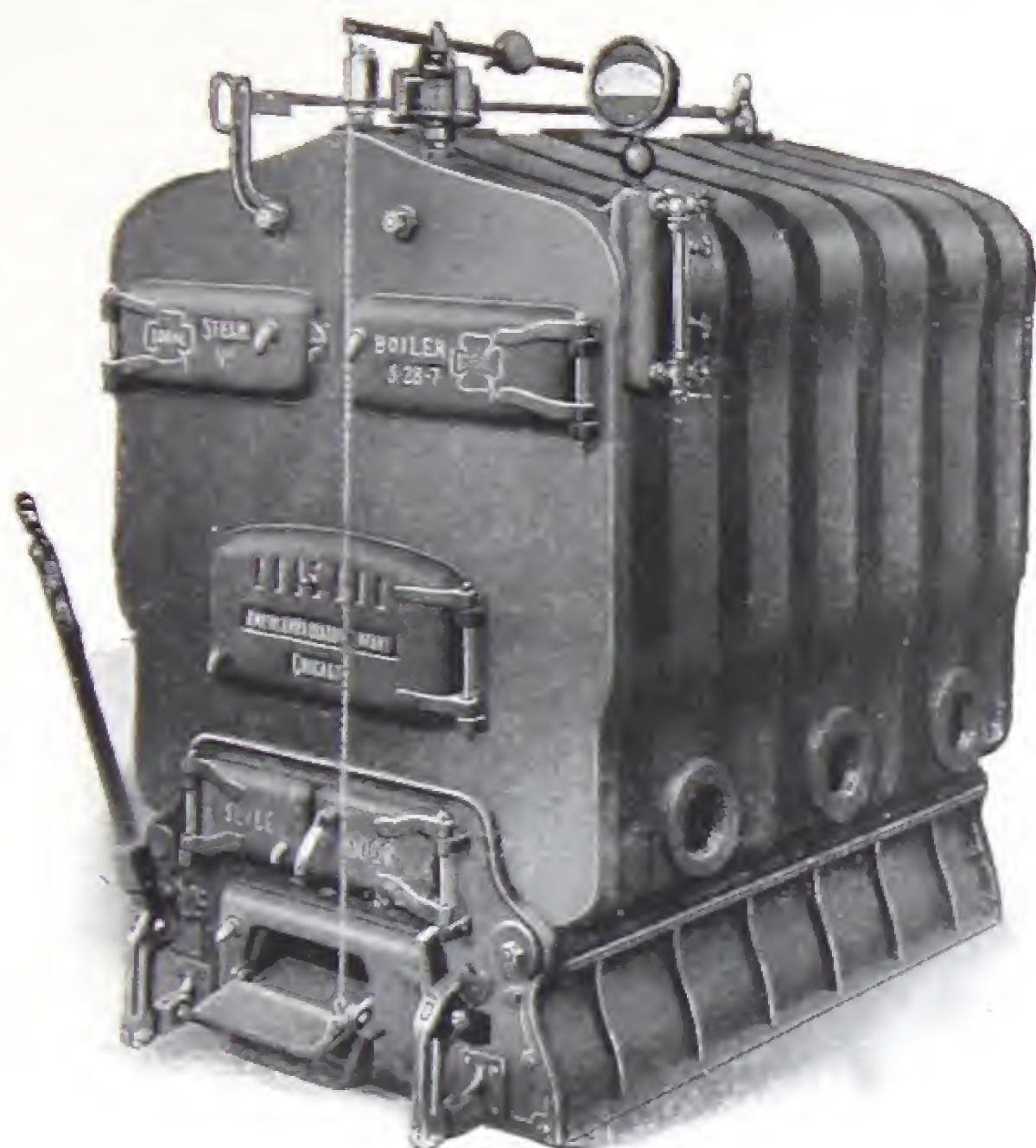
For each supply outlet on top of Boiler there is a corresponding return inlet in either side.

For additional measurements, see pages 46 and 47.

Ratings are for hard coal. For soft coal or wood increase boiler one size.

Add mains and returns to radiation to determine size of boiler required.

Ideal Sectional 28-inch Steam Boilers



No. S-28-7 Boiler

| No. Including Sec. | Length Total Inches | Grate Area Sq. ft. | Out-lets In. | Gallons Water | Ship- ping Weight | *Gross Ratings Sq. ft. | List Price Com- plete |
|--------------------|---------------------|--------------------|--------------|---------------|-------------------|------------------------|-----------------------|
| S-28-5 | 60 | 6.24 | 2—4 | 67 | 3450 | 1300 | \$500.00 |
| S-28-6 | 68 | 7.80 | 2—4 | 81 | 4050 | 1625 | 587.50 |
| S-28-7 | 76 | 9.36 | 3—4 | 95 | 4650 | 1950 | 662.50 |
| S-28-8 | 84 | 10.92 | 3—4 | 109 | 5250 | 2275 | 750.00 |

Height of Boilers, inclusive of trimmings.....67 $\frac{1}{16}$ inches
 Width of Boilers, inclusive of trimmings.....50 $\frac{1}{2}$ inches
 Height of Water Line.....53 $\frac{3}{8}$ inches
 Size of Smoke-Pipe.....12 inches

For Wood Burning. On special order these Boilers are fitted with 12 $\frac{7}{8}$ x 20-inch fire-door opening.

For additional measurements, see pages 46 and 47.

For each supply outlet on top of Boiler there is a corresponding return inlet in either side. Do not bush flow-pipe outlets—connect all of them full size to the main.

Mains and returns must be added to radiation to determine size boiler required.

Ratings are for hard coal. For soft coal or wood select boiler one size larger.

For Direct-Indirect radiation add 50% to boiler capacity.

For Vento-Indirect radiation add 75% to boiler capacity.

Ideal Sectional 36-inch Water Boilers



No. W-36-7 Boiler

| No. Including Sec. | Length Total Inches | Grate Area Sq. ft. | Out-lets In. | Ash Pit (Inside) Inches | Shipping Weight | *Gross Ratings Sq. ft. | List Price Complete |
|--------------------|---------------------|--------------------|--------------|-------------------------------------|-----------------|------------------------|---------------------|
| W-36-5 | 69 $\frac{3}{4}$ | 9.12 | 2—5 | 38 $\frac{1}{16}$ x40 $\frac{3}{4}$ | 4650 | 3450 | \$675.00 |
| W-36-6 | 78 $\frac{7}{8}$ | 11.40 | 2—5 | 38 $\frac{1}{16}$ x49 $\frac{7}{8}$ | 5450 | 4325 | 800.00 |
| W-36-7 | 88 | 13.68 | 3—5 | 38 $\frac{1}{16}$ x59 | 6250 | 5200 | 925.00 |
| W-36-8 | 97 $\frac{1}{8}$ | 15.96 | 3—5 | 38 $\frac{1}{16}$ x68 $\frac{1}{8}$ | 7050 | 6050 | 1062.50 |
| W-36-9 | 106 $\frac{1}{4}$ | 18.24 | 4—5 | 38 $\frac{1}{16}$ x77 $\frac{1}{4}$ | 7850 | 6925 | 1187.50 |

Total Height.....69 $\frac{1}{8}$ inches
 Total Width.....53 $\frac{1}{4}$ inches
 Size of Smoke-Pipe.....15 inches

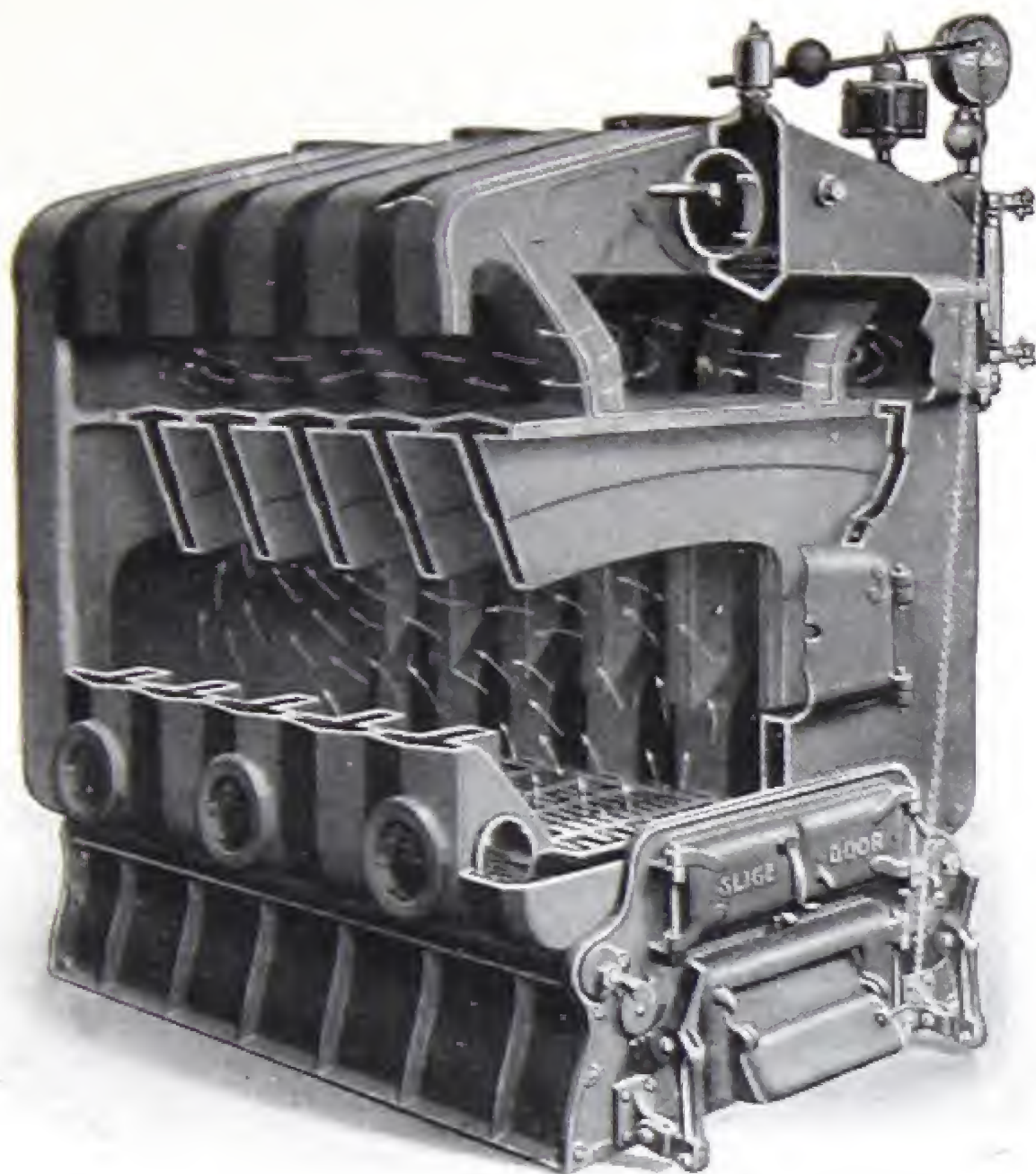
For additional measurements, see pages 46 and 47.

For each supply outlet on top of Boiler there is a corresponding return inlet in either side.

Mains and returns must be added to radiation to determine size boiler required.

Ratings are for hard coal. For soft coal or wood fuel select boiler one size larger.

Ideal Sectional 36-inch Steam Boilers



No. S-36-7 Boiler

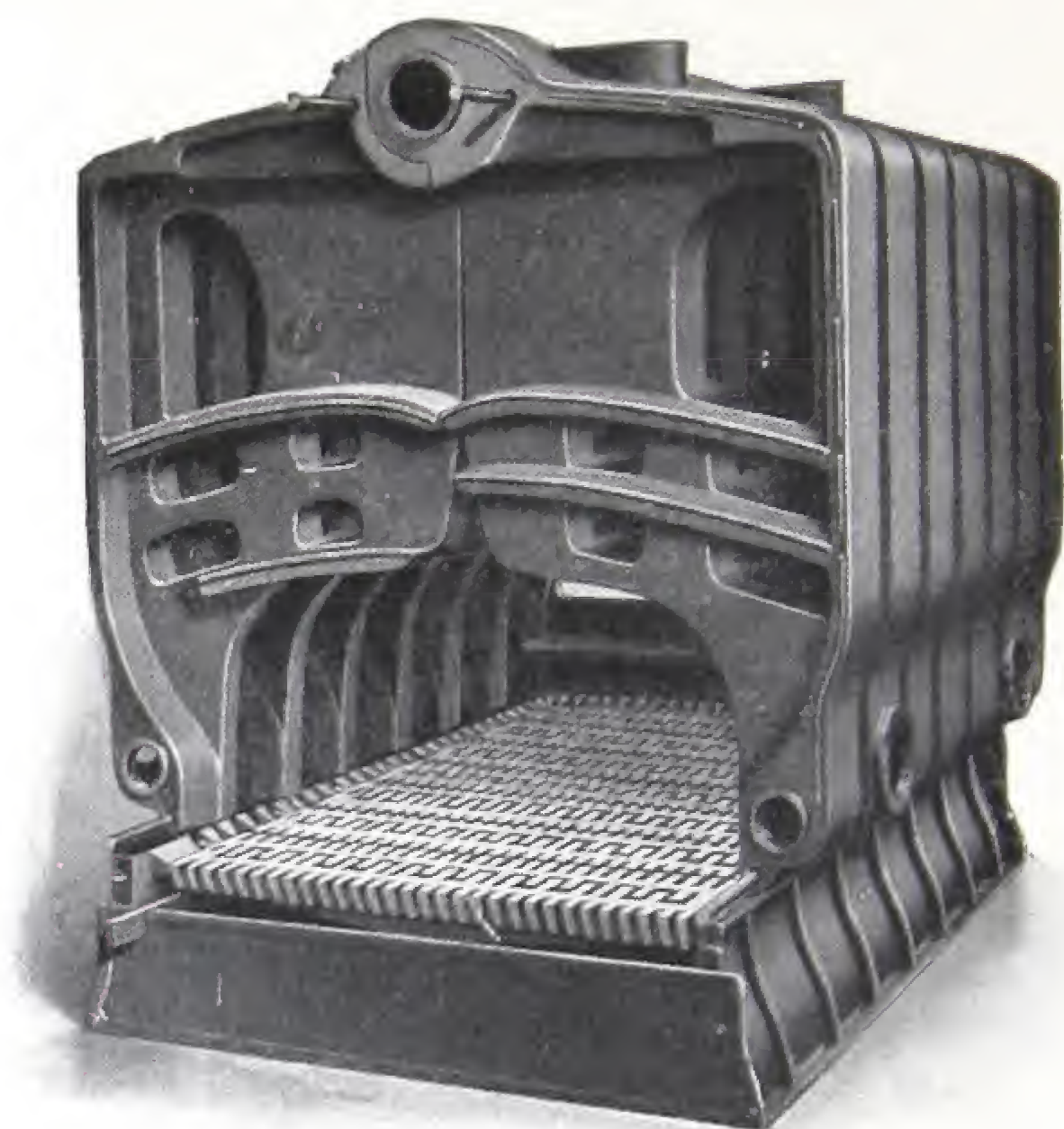
| No. Including Sec. | Length Total Inches | Grate Area Sq. ft. | Out-lets In. | Gallons Water | Ship- ping Weight | *Gross Ratings Sq. ft. | List Price Com- plete |
|--------------------|---------------------------------|--------------------|--------------|---------------|-------------------|------------------------|-----------------------|
| S-36-5 | 63 ³ / ₄ | 9.12 | 2—5 | 102 | 4900 | 2100 | \$700.00 |
| S-36-6 | 78 ⁷ / ₈ | 11.40 | 2—5 | 125 | 5725 | 2625 | 837.50 |
| S-36-7 | 88 | 13.68 | 3—5 | 148 | 6550 | 3150 | 962.50 |
| S-36-8 | 97 ¹ / ₈ | 15.96 | 3—5 | 171 | 7375 | 3675 | 1100.00 |
| S-36-9 | 103 ¹ / ₄ | 18.24 | 4—5 | 194 | 8200 | 4200 | 1225.00 |

Height of Boilers, inclusive of trimmings.....76¹/₄ inches
Width of Boilers, inclusive of trimmings.....60 inches
Height of Water Line.....60³/₄ inches
Size of Smoke-Pipe.....15 inches

For additional measurements, see pages 46 and 47.
For each supply outlet on top of Boiler there is a corresponding return inlet in either side. Do not bush flow-pipe outlet—connect all of them full size to the main.
Mains and returns must be added to radiation to determine size boiler required.
Ratings are for hard coal fuel. If soft coal or wood fuel is to be used, one size larger boiler should be selected.
Add 50% to boiler capacity if Direct-Indirect radiation is used.
Add 75% to boiler capacity if Vento-Indirect radiation is used.

Ideal Sectional 48-inch Water Boilers

(Patented)



Rear Erecting View, No. W-48-8 Boiler

| No Including Sec. | Length Total Inches | Grate Area Sq. ft. | Out-lets In. | Ash Pit (Inside) Inches | Ship- ping Weight | *Gross Ratings Sq. ft. | List Price Com- plete |
|-------------------|---------------------|--------------------|--------------|-------------------------|-------------------|------------------------|-----------------------|
| W-48-6 | 92 | 18.00 | 2—6 | 52 x 55 | 9725 | 8700 | On applica- tion |
| W-48-7 | 102 $\frac{3}{4}$ | 21.60 | 2—6 | 52 x 66 | 11225 | 10375 | |
| W-48-8 | 113 $\frac{1}{2}$ | 25.20 | 3—6 | 52 x 77 | 12725 | 12050 | |
| W-48-9 | 124 $\frac{1}{4}$ | 28.80 | 3—6 | 52 x 88 | 14250 | 13725 | |
| W-48-10 | 135 | 32.40 | 3—6 | 52 x 99 | 15750 | 15400 | |

Height of Boilers from floor to top outlets.....81 $\frac{3}{4}$ inches
 Total Width of Boilers.....68 inches
 Size of Smoke-Pipe.....21 inches

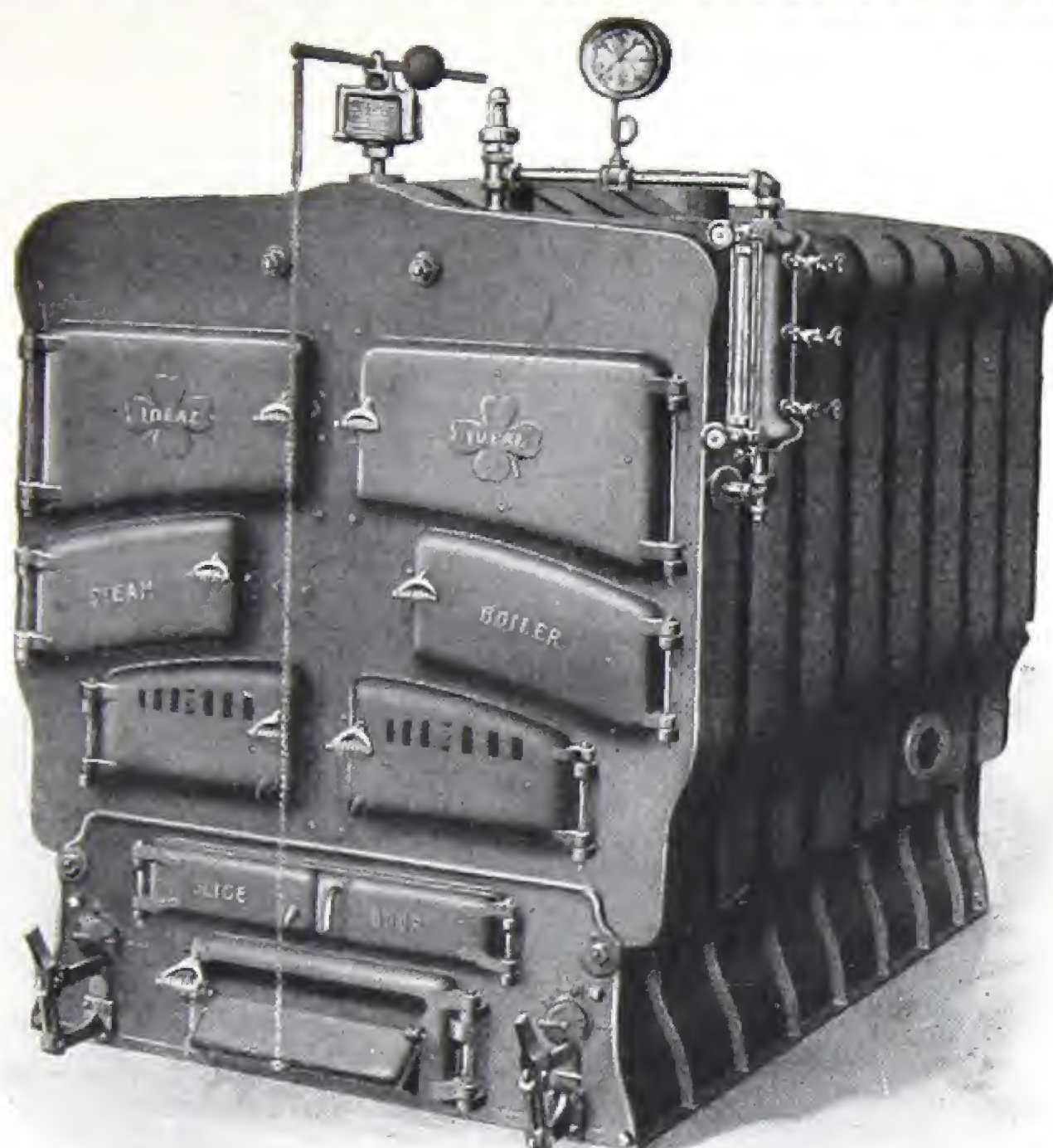
For additional details of measurements, see pages 46 and 47.

48-inch Water Boilers are furnished with four 6-inch return tap- pings, two on face of back section, and one on each side of Boiler in second section from rear. Back openings should be yoked together so that both halves of Boiler may be drained equally.

Mains and returns must be added to radiation to determine size boiler required.

Ratings are for hard coal fuel. If soft coal or wood fuel is to be used one size larger boiler should be selected.

Ideal Sectional 48-inch Steam Boilers



No. S-48-8 Boiler (Patented)

| No. Including Sec. | Length Total Inches | Grate Area Sq. ft. | Out-lets In. | Gallons Water | Ship- ping Weight | *Gross Ratings Sq. ft. | List Price Com- plete |
|--------------------|---------------------------------|--------------------|--------------|---------------|-------------------|------------------------|-----------------------|
| S-48-6 | 92 | 18.00 | 2—6 | 144 | 10350 | 5275 | On applica- tion |
| S 48-7 | 102 ³ / ₄ | 21.60 | 2—6 | 170 | 11875 | 6300 | |
| S-48-8 | 114 | 25.20 | 3—6 | 197 | 13400 | 7325 | |
| S-48-9 | 124 ¹ / ₄ | 28.80 | 3—6 | 223 | 14925 | 8350 | |
| S-48-10 | 135 | 32.40 | 3—6 | 249 | 16450 | 9375 | |

Height of Boilers, inclusive of trimmings.....97 inches
 Width of Boilers, inclusive of trimmings.....80 inches
 Height of Water Line.....72 inches
 Size of Smoke-Pipe.....21 inches

For additional details of measurements, see pages 46 and 47.

48-inch Steam Boilers are furnished with four 4-inch return tap- pings, two on the face of back section, and one on each side of Boiler in third section from rear. Back openings should be yoked together so that both halves of Boiler may be drained equally.

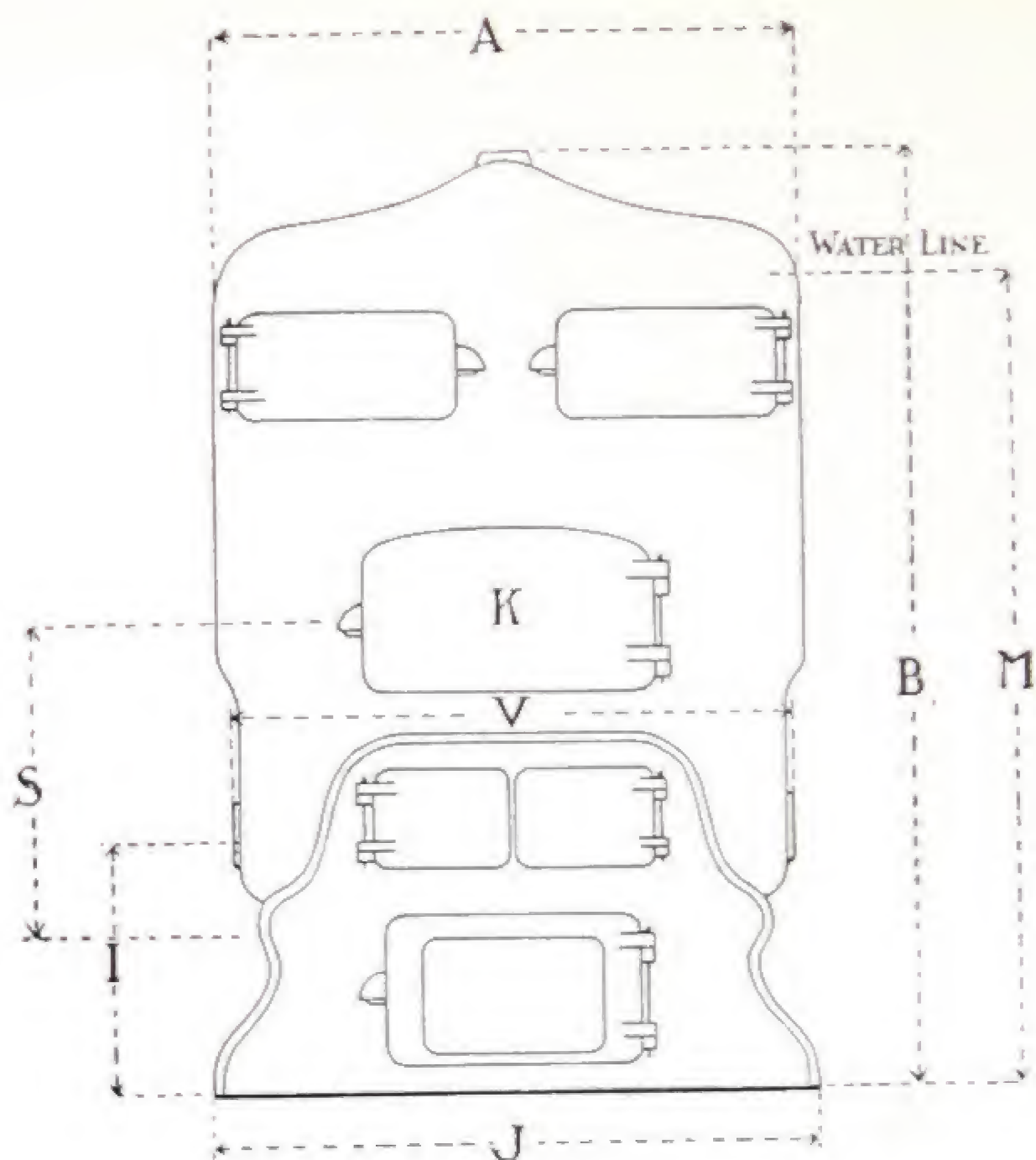
Do not bush flow-pipe outlets—connect all of them full size to the main.

Mains and returns must be added to radiation to determine size boiler required.

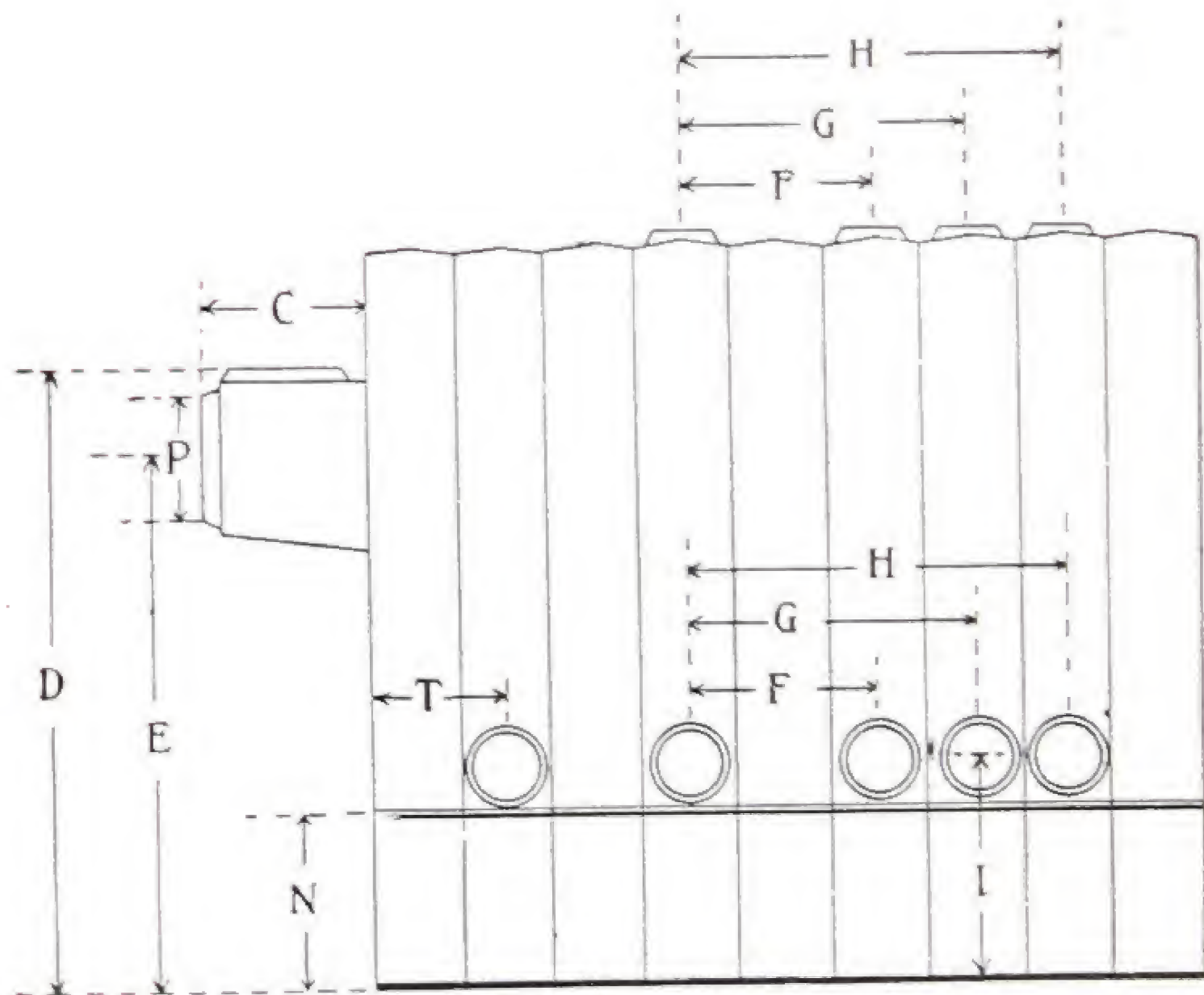
Ratings are for hard coal fuel. If soft coal or wood fuel is used one size larger boiler should be selected.

For Direct-Indirect radiation add 50% to boiler capacity.

For Vento radiation, boiler capacity should be increased 75%



Front View



Sectional View

For details of measurements, see page 47.

IDEAL Boilers are so designed that any casting, whether round or square, may be taken through any door or opening which is not less than 2 feet 6 inches wide.

Ideal and Safford Sectional Boiler Measurements

Distance in inches on the outlines of IDEAL Sectional Boilers on page 24

| | 19-in. Boilers | | 22-in. Boilers | | 25-in. Boilers | |
|---------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|
| | Water | Steam | Water | Steam | Water | Steam |
| A..... | 31 $\frac{1}{4}$ | 32 $\frac{1}{4}$ | 35 $\frac{1}{4}$ | 36 $\frac{1}{4}$ | 40 $\frac{3}{8}$ | 41 $\frac{3}{8}$ |
| B..... | 50 | 50 | 53 | 53 | 57 $\frac{7}{8}$ | 57 $\frac{7}{8}$ |
| †C..... | 15 $\frac{5}{8}$ | 15 $\frac{5}{8}$ | 15 $\frac{1}{4}$ | 15 $\frac{1}{4}$ | 17 $\frac{1}{2}$ | 17 $\frac{1}{2}$ |
| ‡D..... | 45 $\frac{1}{8}$ | 45 $\frac{1}{8}$ | 47 $\frac{3}{4}$ | 47 $\frac{3}{4}$ | 53 | 53 |
| E..... | 37 $\frac{3}{4}$ | 37 $\frac{3}{4}$ | 40 $\frac{1}{2}$ | 40 $\frac{1}{2}$ | 44 $\frac{1}{8}$ | 44 $\frac{1}{8}$ |
| F..... | 13 $\frac{1}{4}$ | 13 $\frac{1}{4}$ | 14 $\frac{1}{8}$ | 14 $\frac{1}{8}$ | 15 $\frac{3}{8}$ | 15 $\frac{3}{8}$ |
| G..... | 19 $\frac{7}{8}$ | 19 $\frac{7}{8}$ | 21 $\frac{1}{4}$ | 21 $\frac{1}{4}$ | 23 $\frac{1}{16}$ | 23 $\frac{1}{16}$ |
| H..... | 26 $\frac{1}{2}$ | 26 $\frac{1}{2}$ | 28 $\frac{1}{4}$ | 28 $\frac{1}{4}$ | 30 $\frac{3}{4}$ | 30 $\frac{3}{4}$ |
| I..... | 16 | 16 | 16 $\frac{3}{4}$ | 16 $\frac{3}{4}$ | 17 $\frac{3}{4}$ | 17 $\frac{3}{4}$ |
| J..... | 26 | 26 | 29 $\frac{1}{8}$ | 29 $\frac{1}{8}$ | 34 $\frac{1}{2}$ | 34 $\frac{1}{2}$ |
| K..... | *8x14 | *8x14 | *8x14 | *8x14 | *9x18 | *9x18 |
| M..... | .. | 43 $\frac{3}{8}$ | .. | 46 $\frac{1}{4}$ | .. | 51 |
| N..... | 9 $\frac{3}{8}$ | 9 $\frac{3}{8}$ | 9 $\frac{1}{2}$ | 9 $\frac{1}{2}$ | 9 $\frac{7}{8}$ | 9 $\frac{7}{8}$ |
| P..... | 9 | 9 | 10 | 10 | 11 | 11 |
| S..... | 12 $\frac{5}{8}$ | 12 $\frac{5}{8}$ | 12 $\frac{3}{8}$ | 12 $\frac{3}{8}$ | 14 $\frac{1}{4}$ | 14 $\frac{1}{4}$ |
| T..... | 8 | 8 | 8 $\frac{1}{2}$ | 8 $\frac{1}{2}$ | 9 $\frac{1}{8}$ | 9 $\frac{1}{8}$ |
| V..... | 29 $\frac{5}{8}$ | 29 $\frac{5}{8}$ | 33 $\frac{9}{16}$ | 33 $\frac{9}{16}$ | 39 $\frac{3}{8}$ | 39 $\frac{3}{8}$ |

| | 28-in. Boilers | | 36-in. Boilers | | 48-in. Boilers | |
|---------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| | Water | Steam | Water | Steam | Water | Steam |
| A..... | 43 $\frac{1}{2}$ | 44 $\frac{1}{2}$ | 53 $\frac{1}{4}$ | 54 $\frac{1}{4}$ | 69 | 69 |
| B..... | 60 $\frac{5}{8}$ | 60 $\frac{5}{8}$ | 69 $\frac{1}{8}$ | 69 $\frac{1}{8}$ | 81 | 81 |
| †C..... | 8 $\frac{1}{8}$ | 18 $\frac{1}{8}$ | 21 $\frac{11}{16}$ | 21 $\frac{11}{16}$ | 27 $\frac{3}{4}$ | 27 $\frac{3}{4}$ |
| ‡D..... | 55 $\frac{7}{8}$ | 55 $\frac{7}{8}$ | 63 $\frac{3}{8}$ | 63 $\frac{3}{8}$ | 73 $\frac{1}{8}$ | 73 $\frac{1}{8}$ |
| E..... | 46 $\frac{1}{4}$ | 46 $\frac{1}{4}$ | 52 $\frac{9}{16}$ | 52 $\frac{9}{16}$ | 59 $\frac{1}{2}$ | 59 $\frac{1}{2}$ |
| F..... | 16 | 16 | 18 $\frac{1}{4}$ | 18 $\frac{1}{4}$ | 21 $\frac{1}{2}$ | 21 $\frac{1}{2}$ |
| G..... | 24 | 24 | 27 $\frac{3}{8}$ | 27 $\frac{3}{8}$ | 32 $\frac{1}{4}$ | 32 $\frac{1}{4}$ |
| H..... | 32 | 32 | 36 $\frac{1}{2}$ | 36 $\frac{1}{2}$ | 43 | 43 |
| I..... | 17 $\frac{7}{8}$ | 17 $\frac{7}{8}$ | 18 $\frac{7}{16}$ | 18 $\frac{7}{16}$ | 22 $\frac{3}{8}$ | 22 $\frac{3}{8}$ |
| J..... | 37 $\frac{1}{8}$ | 37 $\frac{1}{8}$ | 45 $\frac{7}{16}$ | 45 $\frac{7}{16}$ | 58 $\frac{3}{8}$ | 58 $\frac{3}{8}$ |
| K..... | *9x18 | *9x18 | *10x20 | *10x20 | 11x19 | 11x19 |
| M..... | .. | 53 $\frac{3}{8}$ | .. | 60 $\frac{3}{4}$ | .. | 69 |
| N..... | 10 | 10 | 10 $\frac{11}{16}$ | 10 $\frac{11}{16}$ | 14 $\frac{11}{16}$ | 14 $\frac{11}{16}$ |
| P..... | 12 | 12 | 15 | 15 | 21 | 21 |
| S..... | 14 $\frac{1}{4}$ | 14 $\frac{1}{4}$ | 15 $\frac{5}{8}$ | 15 $\frac{5}{8}$ | 17 $\frac{3}{4}$ | 17 $\frac{3}{4}$ |
| T..... | 9 $\frac{1}{2}$ | 9 $\frac{1}{2}$ | 10 $\frac{7}{8}$ | 10 $\frac{7}{8}$ | 12 $\frac{3}{4}$ | .. |
| V..... | 41 $\frac{11}{16}$ | 41 $\frac{11}{16}$ | 52 $\frac{5}{8}$ | 52 $\frac{5}{8}$ | 64 $\frac{11}{16}$ | 64 $\frac{11}{16}$ |

†Measured without Smoke-Hood Cover.

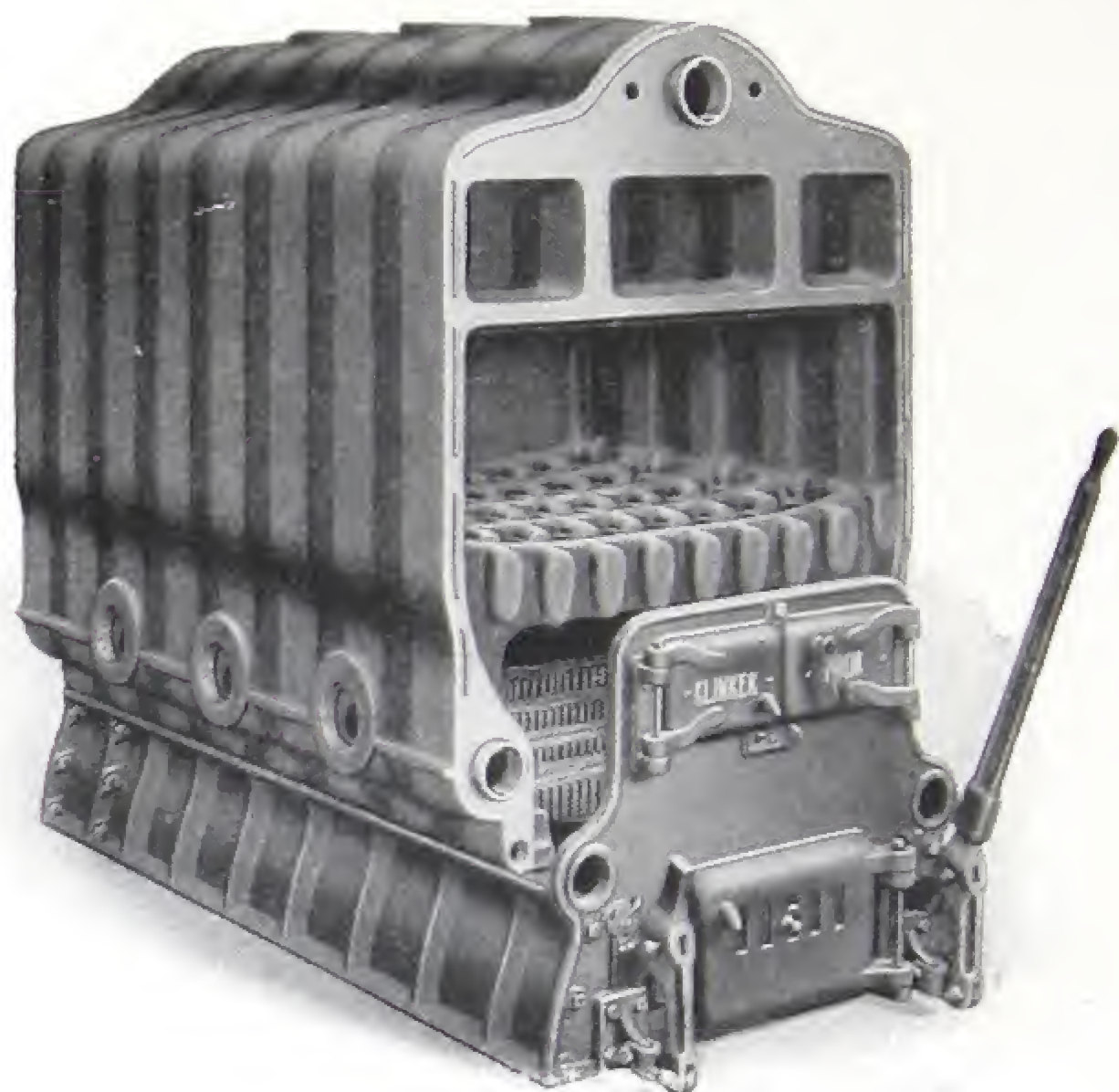
‡Measured with Smoke-Hood Cover on.

*For Wood. Feed Door K in 19-inch Boilers is 10 $\frac{1}{4}$ x 18 inches; in 22-inch Boilers is 11 $\frac{1}{8}$ x 18 inches; in 25-inch Boilers is 11 $\frac{1}{4}$ x 18 inches; in 28-inch Boilers is 12 $\frac{1}{2}$ x 19 $\frac{7}{8}$ inches; in 36-inch Boilers is 13 $\frac{1}{2}$ x 24 inches.

Do not bush the flow pipe outlets of Steam Boilers; connect all of them full size to the main.

Ideal Down Draft Smokeless Water Boilers

For Soft Coal Only



394W-Water Boiler

| No. | Total Length Inches | Water Grate Area | No. of Outlets | Size of Chimney Flue | Height of Chim. | Ratings Sq. ft. Gross | List Price, Complete |
|-------|---------------------|------------------|----------------|----------------------|-----------------|-----------------------|----------------------|
| 364W | 66 $\frac{7}{8}$ | 5.46 | 2-4" | 12 x 12 | 40 | 2450 | \$540.00 |
| 374W | 74 $\frac{1}{2}$ | 7.33 | " | " | 50 | 2950 | 627.50 |
| 384W | 82 $\frac{1}{4}$ | 9.19 | 3-4" | " | 50 | 3450 | 715.00 |
| 394W | 90 | 9.19 | " | 12 x 16 | 60 | 3950 | 802.50 |
| 3104W | 97 $\frac{5}{8}$ | 11.07 | " | " | 60 | 4450 | 890.00 |

Height of boiler.....62 $\frac{3}{4}$ inches
 Width of boiler.....40 $\frac{3}{8}$ inches
 Size of smoke pipe.....12 inches

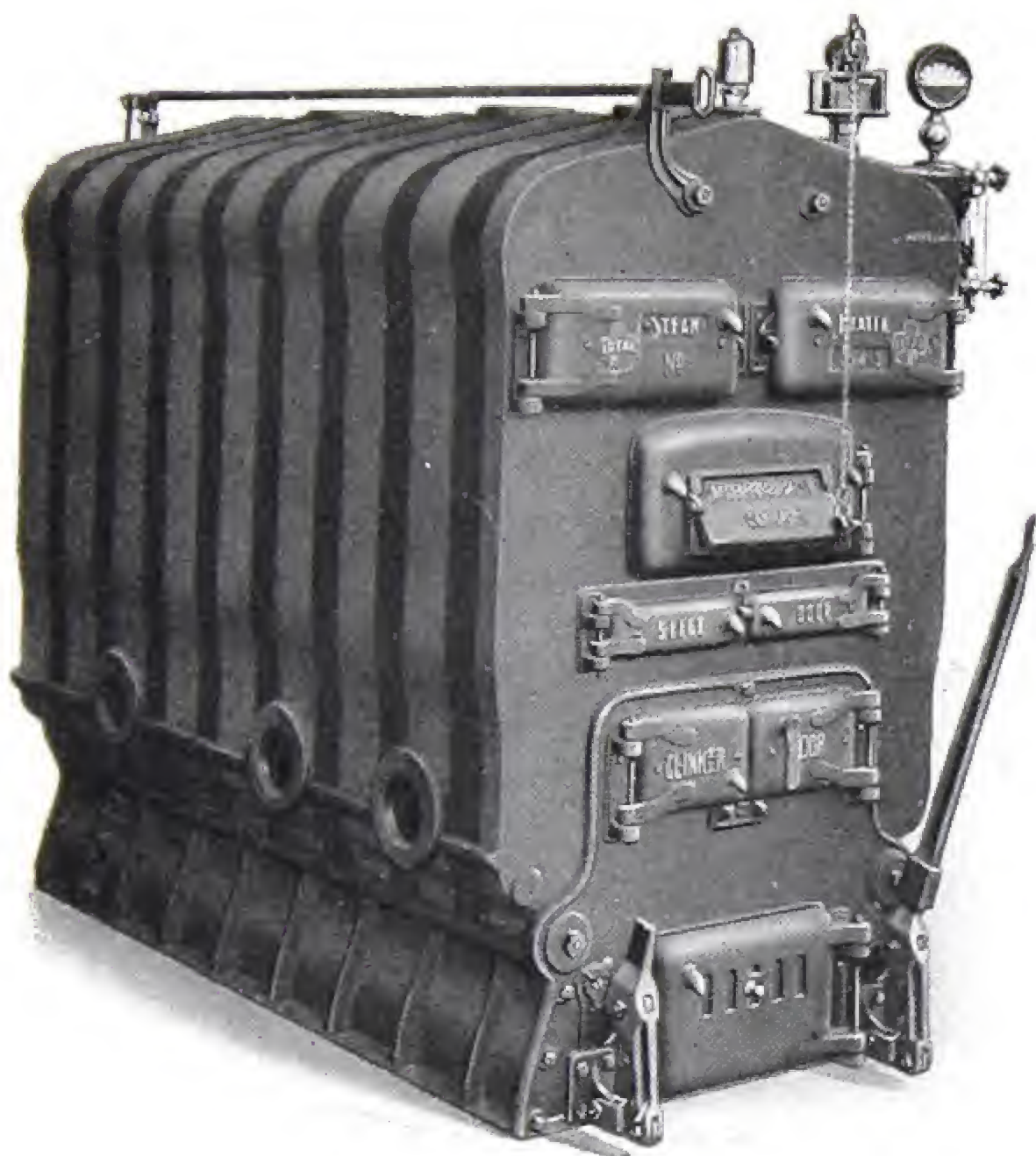
For each outlet there are two inlets, one on each side of boiler.
 For additional data, see page 54.

Ratings are gross, mains both flow and return must be added to heating surface to determine size boiler required.

Write for special catalogue containing data of Smokeless Down Draft Boilers.

Ideal Down Draft Smokeless Steam Boilers

For Soft Coal Only



394S Steam Boiler

| No. | Total Length Inches | Water Grate Area | No. of Outlets | Size of Chimney Flue | Height of Chim. | Ratings Sq. ft. Gross | List Price. Complete |
|-------|---------------------|------------------|----------------|----------------------|-----------------|-----------------------|----------------------|
| 364S | 66 $\frac{7}{8}$ | 5.46 | 2-4" | 12 x 12 | 40 | 1500 | \$550.00 |
| 374S | 74 $\frac{1}{2}$ | 7.33 | " | " | 50 | 1800 | 640.00 |
| 384S | 82 $\frac{1}{4}$ | 9.19 | 3-4" | " | 50 | 2100 | 730.00 |
| 394S | 90 | 9.19 | " | 12 x 16 | 60 | 2400 | 820.00 |
| 3104S | 97 $\frac{5}{8}$ | 11.07 | " | " | 60 | 2700 | 910.00 |

Height of boiler, inclusive of trimmings.....69 inches
 Width of boiler, inclusive of trimmings.....47 $\frac{1}{4}$ inches
 Height of water line.....51 $\frac{7}{16}$ inches
 Size of smoke pipe.....12 inches

For each outlet on top of boiler there are two inlets, one on each side.

For additional data, see page 54.

Ratings are gross, all mains and returns must be added to radiation to determine boiler required.

Write for special catalogue containing data of Ideal Smokeless Down Draft Boilers.

Ideal Down Draft Smokeless Water Boilers

For Soft Coal Only



No. 498W Water Boiler

| No. | Total Length Inches | Water Grate Area | No. of Outlets | Size of Chimney Flue | Height of Chim. | Ratings Sq. ft. Gross | List Price, Complete |
|-------|---------------------|------------------|----------------|----------------------|-----------------|-----------------------|----------------------|
| 468W | 78 $\frac{1}{8}$ | 8.8 | 2-5" | 16 x 16 | 50 | 4800 | \$ 924.00 |
| 478W | 88 | 11.8 | 2-5" | " | 50 | 5600 | 1024.00 |
| 488W | 97 $\frac{1}{8}$ | 14.8 | 3-5" | " | 60 | 6400 | 1124.00 |
| 498W | 103 $\frac{1}{4}$ | 14.8 | 3-5" | " | 70 | 7200 | 1224.00 |
| 4108W | 115 $\frac{3}{8}$ | 17.8 | 3-5" | 20 x 20 | 70 | 8000 | 1324.00 |
| 4118W | 124 $\frac{1}{2}$ | 17.8 | 3-5" | 24 x 24 | 80 | 8800 | 1424.00 |

Height of boiler.....69 $\frac{1}{8}$ inches
 Width of boiler.....53 $\frac{1}{4}$ inches
 Size of smoke pipe.....15 inches

For each outlet there are two inlets, one on each side of boiler.

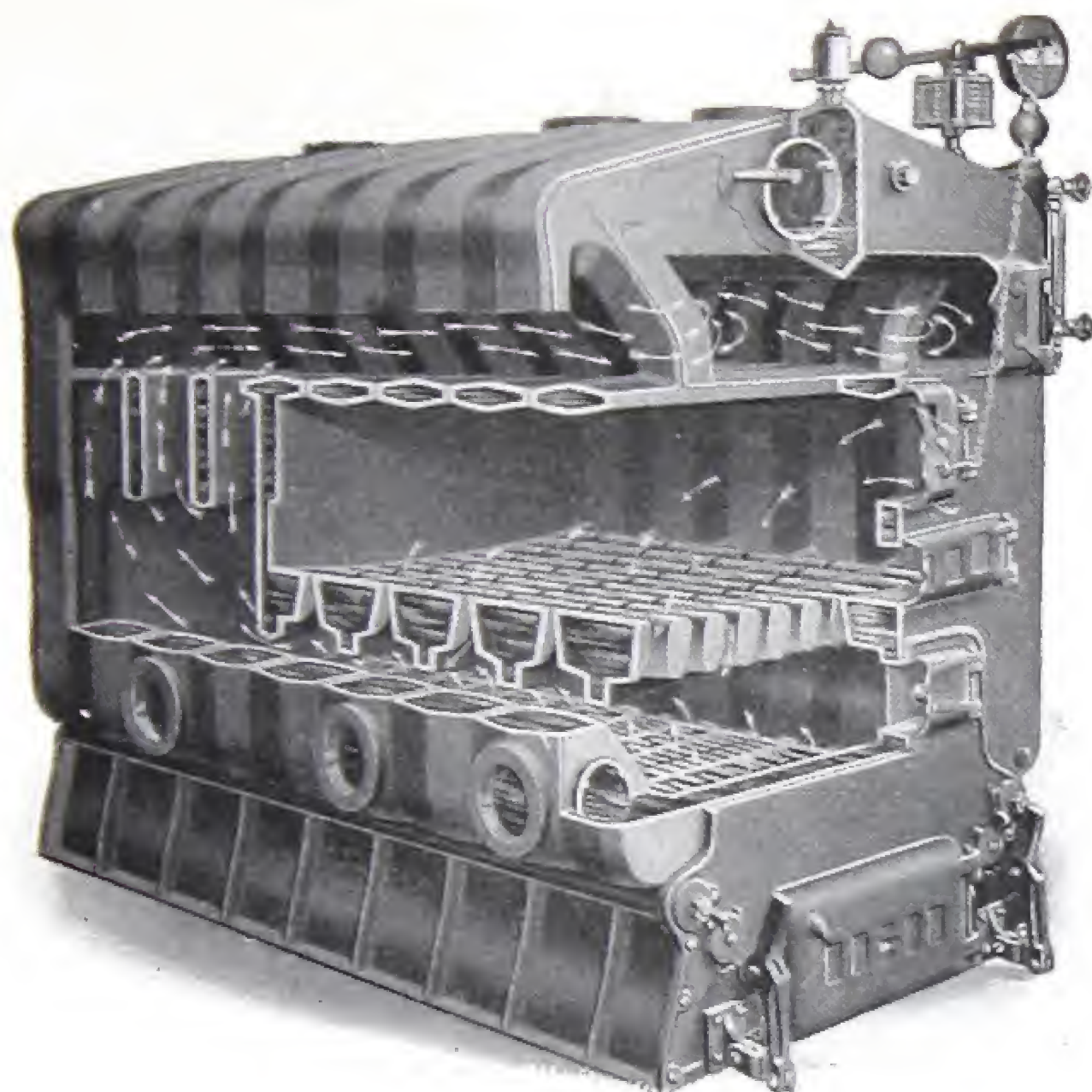
For additional data, see page 54.

Ratings are gross, mains both flow and return must be added to radiation to determine size boiler required.

Write for special catalogue containing data of Smokeless Down-Draft Boilers.

Ideal Down Draft Smokeless Steam Boiler

For Soft Coal Only



No. 498S Steam Boiler

| No. | Total Length Inches | Water Grate Area | No. of Outlets | Size of Chimney Flue | Height of Chim. | Ratings Sq. ft. Gross | List Price, Complete |
|-------|---------------------|------------------|----------------|----------------------|-----------------|-----------------------|----------------------|
| 468S | 78 $\frac{7}{8}$ | 8.8 | 2-5" | 16 x 16 | 50 | 3000 | \$ 944.00 |
| 478S | 88 | 11.8 | 2-5" | " | 50 | 3500 | 1044.00 |
| 488S | 97 $\frac{1}{8}$ | 14.8 | 3-5" | " | 60 | 4000 | 1144.00 |
| 498S | 106 $\frac{1}{4}$ | 14.8 | 3-5" | " | 70 | 4500 | 1244.00 |
| 4108S | 115 $\frac{3}{8}$ | 17.8 | 3-5" | 20 x 20 | 70 | 5000 | 1344.00 |
| 4118S | 124 $\frac{1}{2}$ | 17.8 | 3-5" | 24 x 24 | 80 | 5500 | 1444.00 |

Height of boiler, inclusive of trimmings.....76 $\frac{1}{4}$ inches
 Width of boiler, inclusive of trimmings.....60 inches
 Height of water line.....60 $\frac{3}{4}$ inches
 Size of smoke pipe.....15 inches

For each outlet there are two inlets, one on each side of boiler.

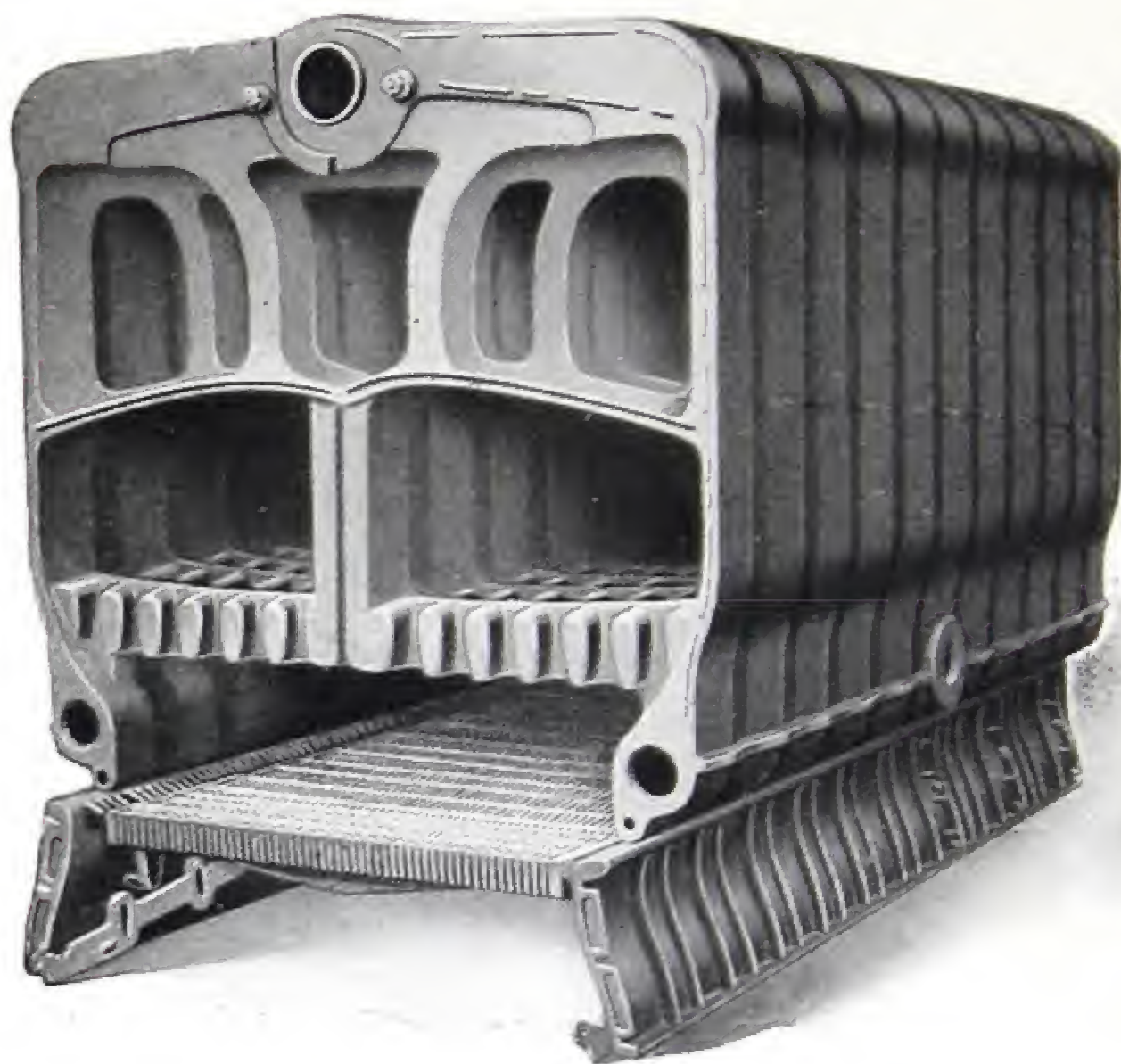
For additional data, see page 54.

Ratings are gross. All mains and returns must be added to radiation to determine size boiler required.

Write for special catalogue containing data of Down-Draft Boilers.

Ideal Down Draft Smokeless Water Boilers

For Soft Coal Only



Inner View No. 6120W

| No. | Total Length Inches | Water Grate Area | No. of Outlets | Size of Chimney Flue | Height of Chim. | Ratings Sq. ft. Gross | List Price, Complete |
|-------|---------------------|------------------|----------------|----------------------|-----------------|-----------------------|----------------------|
| 670W | 102 $\frac{3}{4}$ | 17.2 | 3-6" | 24 x 24 | 65 | 10000 | \$1584.00 |
| 680W | 113 $\frac{1}{2}$ | 21.5 | 3-6" | 24 x 24 | 75 | 11500 | 1764.00 |
| 690W | 124 $\frac{1}{4}$ | 25.8 | 3-6" | 24 x 28 | 75 | 13000 | 1944.00 |
| 6100W | 135 | 25.8 | 4-6" | 28 x 28 | 80 | 14400 | 2124.00 |
| 6110W | 145 $\frac{3}{4}$ | 30.1 | 4-6" | 30 x 30 | 85 | 15800 | 2304.00 |

Height of boiler.....81 $\frac{3}{4}$ inches
 Width of boiler.....68 inches
 Size of smoke pipe.....21 inches

For each outlet there are two inlets, one on each side of the boiler and there are also two return inlets on face of back section which should be yoked together to drain both halves when necessary to empty boiler.

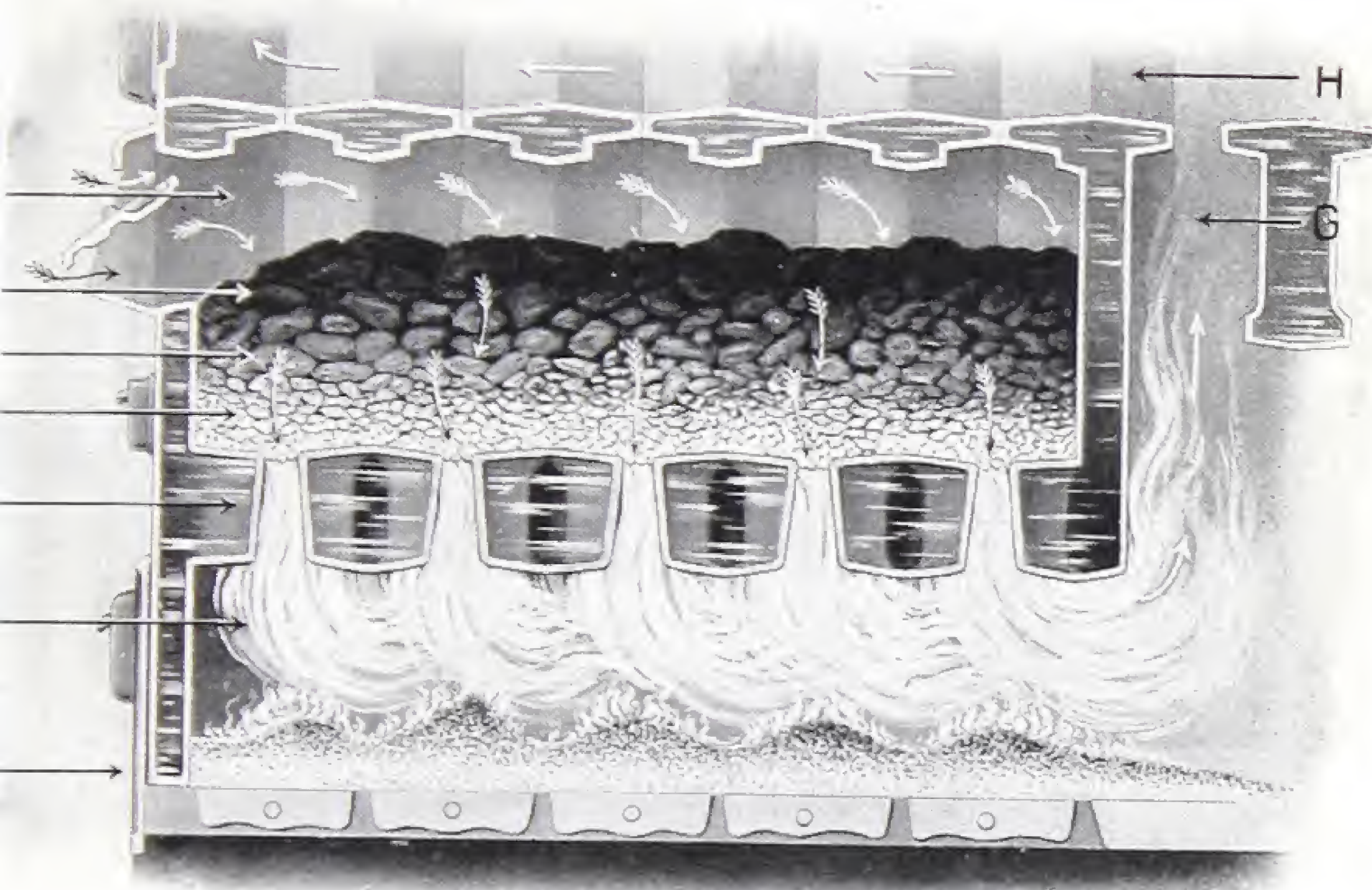
For additional data, see page 54.

Ratings are gross. All mains and returns must be added to radiation to determine size of boiler required.

Send for special catalogue.

Ideal Down Draft Smokeless Steam Boilers

For Soft Coal Only



The Down Draft Process of Smokeless Combustion

| No. | Total Length Inches | Water Grate Area | No. of Outlets | Size of Chimney Flue | Height of Chim. | Ratings Sq. ft. Gross | List Price. Complete |
|-------|---------------------|------------------|----------------|----------------------|-----------------|-----------------------|----------------------|
| 670S | 102 $\frac{3}{4}$ | 17.2 | 3-6" | 24 x 24 | 65 | 6300 | \$1604.00 |
| 680S | 113 $\frac{1}{2}$ | 21.5 | 3-6" | 24 x 24 | 75 | 7200 | 1784.00 |
| 690S | 124 $\frac{1}{4}$ | 25.8 | 3-6" | 24 x 28 | 75 | 8100 | 1964.00 |
| 6100S | 135 | 25.8 | 4-6" | 28 x 28 | 80 | 9000 | 2144.00 |
| 6110S | 145 $\frac{3}{4}$ | 30.1 | 4-6" | 30 x 30 | 85 | 9900 | 2324.00 |

Height of boiler, inclusive of trimmings.....97 inches
 Width of boiler, inclusive of trimmings.....80 inches
 Size of smoke pipe.....21 inches

For each outlet there are two inlets, one on each side of the boiler, and there are also two return inlets on face of the back section which should be yoked together to drain both valves when necessary to empty boiler.

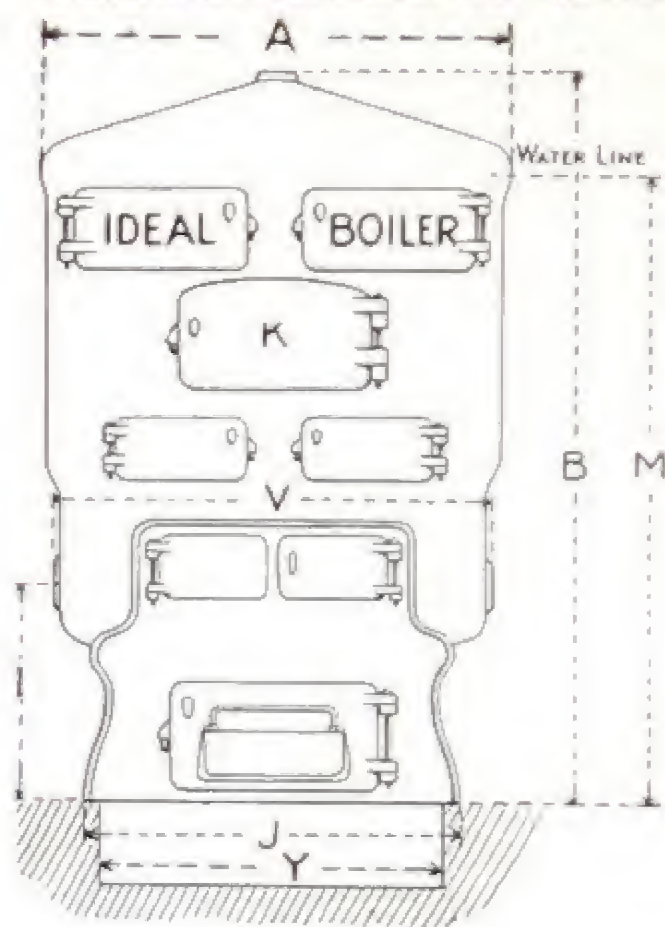
For additional data, see page 54.

Ratings are gross. All mains and returns must be added to radiation to determine size of boiler required.

Send for special catalogue.

Ideal Smokeless Down-Draft Boilers

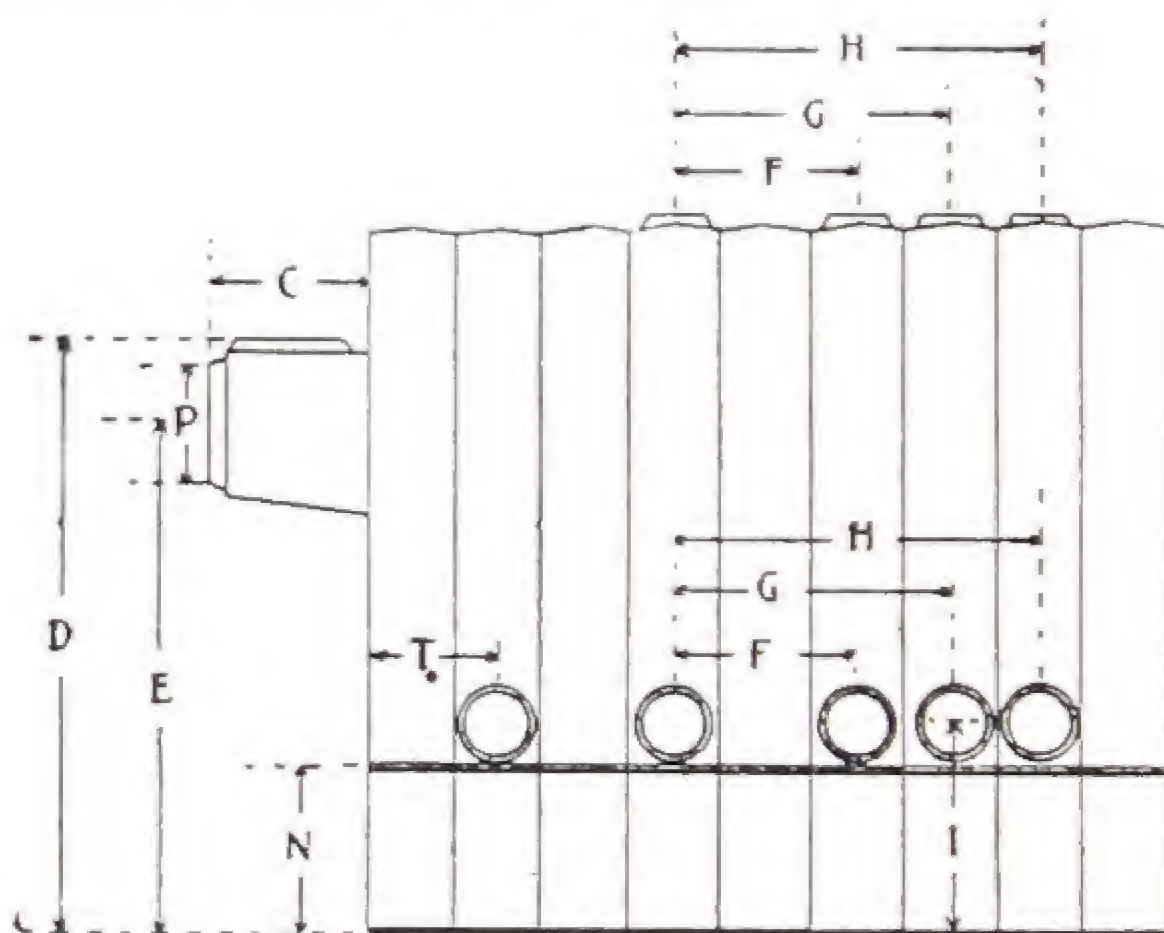
Measurements in Inches



Front View

| Boiler No. | A | B | I | J | K | M | V |
|----------------------|------------------|------------------|-------------------|-------------------|-------------------------------------|-------------------|------------------|
| 364-S to 394-S..... | 41 $\frac{3}{8}$ | 62 $\frac{3}{4}$ | 17 $\frac{3}{4}$ | 34 $\frac{1}{2}$ | 8 $\frac{3}{4}$ x18 | 54 $\frac{7}{16}$ | 39 $\frac{3}{8}$ |
| 364-W to 394-W..... | 40 $\frac{3}{8}$ | 62 $\frac{3}{4}$ | 17 $\frac{3}{4}$ | 34 $\frac{1}{2}$ | 8 $\frac{3}{4}$ x18 | ..... | 39 $\frac{3}{8}$ |
| 468-S to 4108-S..... | 54 $\frac{1}{4}$ | 69 $\frac{1}{8}$ | 18 $\frac{7}{16}$ | 45 $\frac{7}{16}$ | 9 $\frac{1}{8}$ x20 | 60 $\frac{3}{4}$ | 52 $\frac{5}{8}$ |
| 468-W to 4108-W..... | 53 $\frac{1}{4}$ | 69 $\frac{1}{8}$ | 18 $\frac{7}{16}$ | 45 $\frac{7}{16}$ | 9 $\frac{1}{8}$ x20 | ..... | 52 $\frac{5}{8}$ |
| 670-S to 6100-S..... | 69 | 81 $\frac{3}{4}$ | 22 $\frac{3}{8}$ | 58 $\frac{3}{8}$ | †12 $\frac{1}{2}$ x22 $\frac{1}{8}$ | 72 | 64 $\frac{3}{4}$ |
| 670-W to 6100-W..... | 68 | 81 $\frac{3}{4}$ | 22 $\frac{3}{8}$ | 58 $\frac{3}{8}$ | †12 $\frac{1}{2}$ x22 $\frac{1}{8}$ | ..... | 64 $\frac{3}{4}$ |

†Two doors each of that size for large boilers.



Sectional View

| Boiler No. | C | D | E | F | G | H | N | P | T |
|----------------------|-------------------|-------------------|-------------------|------------------|-------------------|------------------|--------------------|----|------------------|
| 364-S to 394-S..... | 18 $\frac{1}{8}$ | 57 $\frac{1}{16}$ | 47 $\frac{1}{2}$ | 15 $\frac{3}{8}$ | 23 $\frac{1}{16}$ | 30 $\frac{3}{4}$ | 9 $\frac{7}{8}$ | 12 | 9 $\frac{1}{8}$ |
| 364-W to 394-W..... | 18 $\frac{1}{8}$ | 57 $\frac{1}{16}$ | 47 $\frac{1}{2}$ | 15 $\frac{3}{8}$ | 23 $\frac{1}{16}$ | 30 $\frac{3}{4}$ | 9 $\frac{7}{8}$ | 12 | 9 $\frac{1}{8}$ |
| 468-S to 4108-S..... | 21 $\frac{1}{16}$ | 63 $\frac{3}{8}$ | 52 $\frac{9}{16}$ | 18 $\frac{1}{4}$ | 27 $\frac{3}{8}$ | 36 $\frac{1}{2}$ | 10 $\frac{13}{16}$ | 15 | 10 $\frac{7}{8}$ |
| 468-W to 4108-W..... | 21 $\frac{9}{16}$ | 63 $\frac{3}{8}$ | 52 $\frac{9}{16}$ | 18 $\frac{1}{4}$ | 27 $\frac{3}{8}$ | 36 $\frac{1}{2}$ | 10 $\frac{13}{16}$ | 15 | 10 $\frac{7}{8}$ |
| 670-S to 6100-S..... | 27 $\frac{1}{4}$ | 73 $\frac{1}{8}$ | 59 $\frac{1}{2}$ | 21 $\frac{1}{2}$ | 32 $\frac{1}{4}$ | 43 | 14 $\frac{11}{16}$ | 21 | 12 $\frac{3}{4}$ |
| 670-W to 6100-W..... | 27 $\frac{1}{4}$ | 73 $\frac{1}{8}$ | 59 $\frac{1}{2}$ | 21 $\frac{1}{2}$ | 32 $\frac{1}{4}$ | 43 | 14 $\frac{11}{16}$ | 21 | 12 $\frac{3}{4}$ |

Ideal Smokeless Down-Draft Boilers

Fuels

The ratings of IDEAL Down-Draft Boilers are based on the use of the average grades of soft coal. These boilers will burn any kind of soft coal without generating smoke.

Operation

In starting fire in Down-Draft Boiler build a strong wood fire on the lower grates. When the wood fire is well under way, a layer of dry wood should be laid on the upper grates, on which should be fed a layer of soft coal, eight to twelve inches deep. A light layer of kindling wood placed on top of the coal and fired will ignite the fuel and the wood underneath it.

Do not feed any coal directly onto lower grates—as they are intended to burn only the live coals which drop through the upper grate spaces.

If large lump coal is used, it must be broken up before feeding. Do not put on too much coal at one time, but rather feed frequently.

Use the slice bar only when more air is needed to burn coal on upper grates. Clean the flues two or three times a week—or daily, if necessary.

Care is required in starting a new fire; otherwise there will be some smoke with the first green coal; but if the foregoing instructions are followed, there will be little or no smoke when the fire is started.

After the fire is started there need be no smoke when recoaling. Sometimes, however, when the fire is burned too low, and a quantity of green coal is thrown on, there will be a little smoke for two or three minutes. If the smoke lasts beyond five minutes, it is wholly because of improper firing.

Ideal and Safford Sectional Boilers

Arrangement of Grate Bars and Connecting Arms

| Boiler No. | Left-Hand Grate Bars | Right-Hand Grate Bars | Size Right- Hand Front Half Connect- ing Arm | Boiler No. | Left-Hand Grate Bars | Right-Hand Grate Bars | Size Right- Hand Front Half Connect- ing Arm |
|-------------|-------------------------|--------------------------|---|-------------|-------------------------|--------------------------|---|
| S or W-19-5 | 4 | ..... | ..... | S or W-28-7 | 3 | 3 | Medium |
| S or W-19-6 | 5 | ..... | ..... | S or W-28-8 | 4 | 3 | Long |
| S or W-19-7 | 6 | ..... | ..... | S or W-36-5 | 2 | 2 | Short |
| S or W-22-5 | 2 | 2 | ..... | S or W-36-6 | 3 | 2 | Medium |
| S or W-22-6 | 3 | 2 | ..... | S or W-36-7 | 3 | 3 | " |
| S or W-22-7 | 3 | 3 | Medium | S or W-36-8 | 4 | 3 | Long |
| S or W-25-5 | 2 | 2 | ..... | S or W-36-9 | 4 | 4 | " |
| S or W-25-6 | 3 | 2 | Medium | S or W-4806 | 3 | 2 | Short |
| S or W-25-7 | 3 | 3 | " | S or W-4807 | 3 | 3 | " |
| S or W-25-8 | 4 | 3 | Long | S or W-4808 | 4 | 3 | Medium |
| S or W-28-5 | 2 | 2 | ..... | S or W-4809 | 4 | 4 | " |
| S or W-28-6 | 3 | 2 | Medium | S or W-4810 | 5 | 4 | Long |

Ideal Smokeless Down-Draft Boilers

Arrangement of Lower Grate Bars and Connecting Arms

| Boiler Number | L.H. Grate Bars | R.H. Grate Bars | Size Right- Hand Front Half Con- necting Arm | Solid Grates Back of Bridgewall Section |
|---------------|-----------------------|-----------------------|--|--|
| 364-S or W | 2 | 1 | Short | 1 Wide |
| 374-S or W | 2 | 2 | " | 1 " |
| 384-S or W | 3 | 2 | Medium | 1 " |
| 394-S or W | 3 | 2 | " | 1 " and 1 Narrow |
| 468-S or W | 2 | 1 | Short | 1 Wide |
| 478-S or W | 2 | 2 | " | 1 " |
| 488-S or W | 3 | 2 | Medium | 1 " |
| 498-S or W | 3 | 2 | " | 1 " and 1 Narrow |
| 4108-S or W | 3 | 3 | " | 1 " " 1 " |
| 670-S or W | 2 | 2 | Short | 2 Medium Blank |
| 680-S or W | 3 | 2 | Medium | 2 " " |
| 690-S or W | 3 | 3 | " | 2 " " |
| 6100-S or W | 3 | 3 | " | 3 " " |

Approximate Shipping Weights of Sirdar Boilers and Radiators

| No. | Hot Water | | Steam | | No. | Hot Water | | Steam | |
|------|-----------|-----------|----------|-----------|------|-----------|-----------|----------|-----------|
| | Low Base | High Base | Low Base | High Base | | Low Base | High Base | Low Base | High Base |
| A-15 | 700 | 740 | 750 | 800 | B-25 | 1630 | 1700 | 1720 | 1780 |
| B-15 | 790 | 830 | 840 | 880 | C-25 | 1790 | 1860 | 1840 | 1900 |
| A-17 | 820 | 870 | 920 | 960 | A-28 | 1770 | 1830 | 1840 | 1900 |
| B-17 | 920 | 960 | 1040 | 1080 | B-28 | 1940 | 2000 | 2020 | 2080 |
| C-17 | 1025 | 1060 | 1100 | 1140 | C-28 | 2160 | 2220 | 2300 | 2360 |
| A-19 | 950 | 1000 | 1040 | 1090 | A-31 | 2000 | 2060 | 2300 | 2360 |
| B-19 | 1030 | 1070 | 1180 | 1230 | B-31 | 2230 | 2300 | 2410 | 2470 |
| C-19 | 1170 | 1230 | 1250 | 1290 | C-31 | 2500 | 2570 | 2730 | 2800 |
| A-22 | 1200 | 1250 | 1340 | 1400 | A-34 | 2300 | 2380 | 2730 | 2800 |
| B-22 | 1360 | 1400 | 1490 | 1540 | B-34 | 2650 | 2730 | 2810 | 2900 |
| C-22 | 1500 | 1550 | 1610 | 1650 | C-34 | 2870 | 2950 | 3050 | 3100 |
| A-25 | 1480 | 1540 | 1600 | 1660 | | | | | |

Radiators weigh approximately 7 lbs. per sq. foot.

Ideal Water and Laundry Heaters



No. 09 Ideal
Typical of Nos. 05 and 07
04, 06 and 08 do not have dome sections



Invincible Washday



No. 1-D Ideal Laundry

Ideal Water and Laundry Heaters

Data and List Prices

| Name | Old No. | New No. | Nom. Diam. Grate Inches | Outlets Inches | Capacity U.S. Gal. | Radiator Net Rating Sq. Ft. | List Price |
|------------------------|---------|---------|-------------------------|----------------|--------------------|-----------------------------|------------|
| Junior..... | 00 | 00 | 10 | 1-1 ½ | 60 | ... | \$ 45.00 |
| " | 0 | 0 | 10 | 1-1 ½ | 90 | 40 | 63.00 |
| " | 10 | 04 | 12 | 3-1 ½ | 190 | 150 | 120.00 |
| " | 12 | 05 | 12 | 3-1 ½ | 210 | 200 | 143.00 |
| " | 20 | 06 | 15 | 3-2 | 380 | 325 | 164.00 |
| " | 22 | 07 | 15 | 3-2 | 425 | 400 | 203.00 |
| " | 30 | 08 | 18 | 3-2 | 600 | 525 | 210.00 |
| " | 32 | 09 | 18 | 3-2 | 660 | 600 | 249.00 |
| Laundry.... | 1-D | 1-D | 10 | 1-1 | 100 | ... | 77.00 |
| Invincible Washday.... | | | 8 | 1-1 | 40 | ... | 35.00 |

*Actual practice has demonstrated that a heater which will raise the water from 25 to 30 degrees per hour in the storage tank is sufficiently large for the ordinary residence. The above ratings are based on raising the quantity of water stated in gallons 25 degrees Fahrenheit per hour for eight consecutive hours on one full charge of hard coal as fuel. In apartment buildings, barber shops, etc., where the demand is proportionately heavier, larger heater capacity must be provided.

When Water Heaters are subjected to some unusual pressure, as is the case when tanks are connected direct to City Pumping Station, and the pressure is increased during times of conflagration or the like, it is recommended that the system be equipped with a Water-Pressure Reducing Valve.

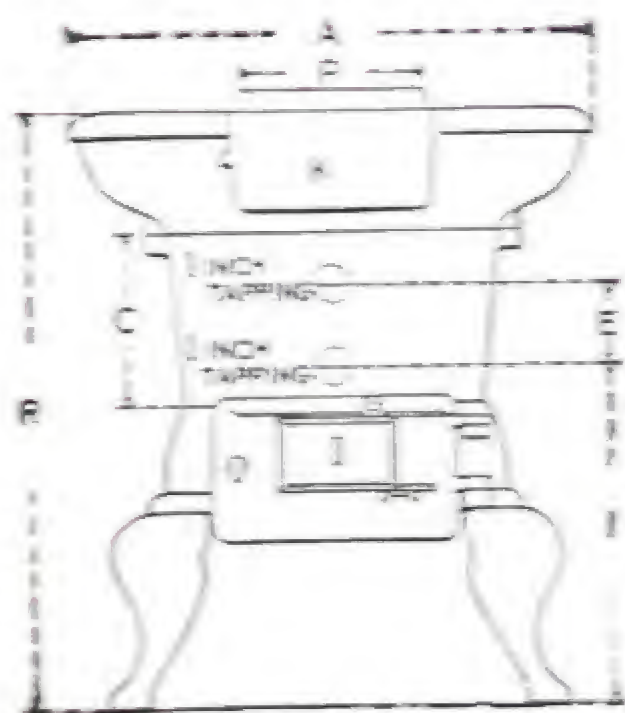
No fire tools are supplied with above Heaters.

See pages 60 and 61 for additional measurements.

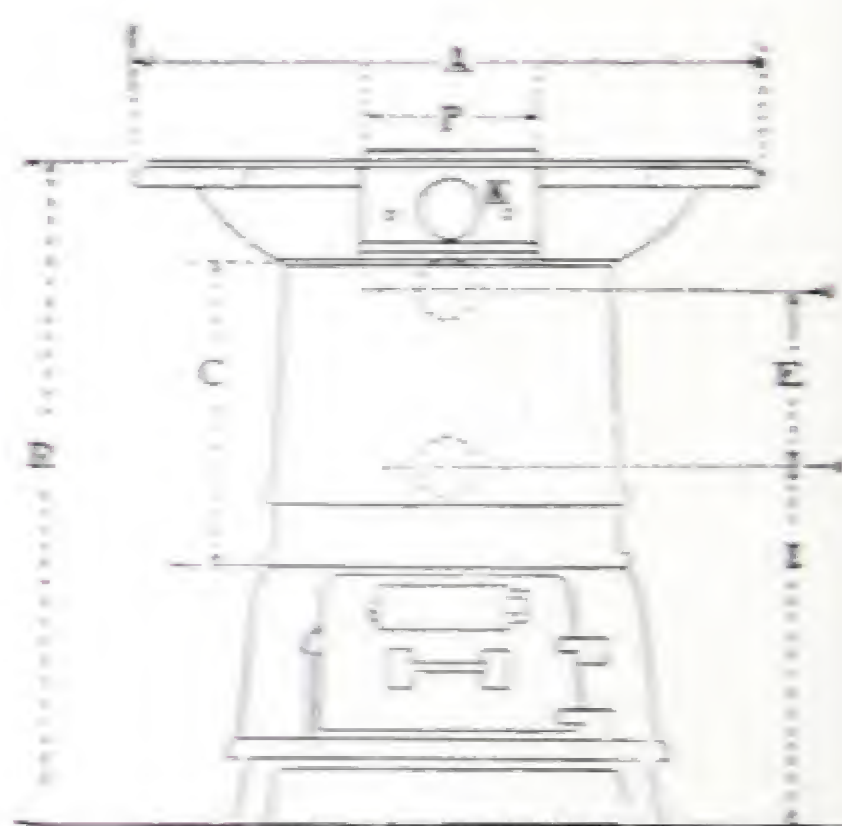
Ideal Water-Heater Dimensions



Ideal Junior



Invincible Washday



Ideal Laundry

Ideal Water-Heater Dimensions

Cont'd

Ideal Junior Water Heaters

| No. | A | B | E | I | P | R | S |
|------|------------------|------------------|------------------|------------------|---|------------------|------------------|
| * 00 | 15 $\frac{1}{4}$ | 24 $\frac{3}{8}$ | .... | 14 $\frac{3}{8}$ | 5 | 27 $\frac{5}{8}$ | ... |
| 0 | 18 | 31 | .... | 14 $\frac{1}{2}$ | 5 | 34 $\frac{1}{2}$ | ... |
| 04 | 23 $\frac{1}{8}$ | 36 $\frac{3}{8}$ | 12 | 14 $\frac{3}{4}$ | 6 | 40 $\frac{3}{8}$ | 18 $\frac{3}{4}$ |
| 05 | 23 $\frac{1}{8}$ | 42 $\frac{1}{8}$ | 14 $\frac{3}{4}$ | 14 $\frac{3}{4}$ | 6 | 45 $\frac{1}{8}$ | 18 $\frac{3}{4}$ |
| 06 | 24 $\frac{3}{4}$ | 42 $\frac{3}{8}$ | 14 $\frac{7}{8}$ | 14 $\frac{7}{8}$ | 6 | 48 | 20 $\frac{3}{8}$ |
| 07 | 24 $\frac{3}{4}$ | 48 $\frac{1}{8}$ | 17 $\frac{1}{4}$ | 14 $\frac{7}{8}$ | 6 | 53 $\frac{1}{2}$ | 20 $\frac{3}{8}$ |
| 08 | 27 $\frac{1}{8}$ | 42 $\frac{1}{2}$ | 18 $\frac{1}{4}$ | 15 | 7 | 47 $\frac{3}{4}$ | 23 $\frac{1}{8}$ |
| 09 | 27 $\frac{1}{8}$ | 48 $\frac{3}{4}$ | 17 $\frac{3}{4}$ | 15 | 7 | 54 $\frac{1}{8}$ | 23 $\frac{1}{8}$ |

*These measurements are for the No. 00 Heater as regularly furnished with Base Plate and Legs. For Heater without Base Plate and Legs deduct 3 inches from measurements, R, B and I.

Ideal Laundry Water Heater No. I-D

| No. | A | C | E | K | I | P | R |
|-----|------------------|------------------|------------------|----------------------------------|------------------|---|----|
| 1-D | 27 $\frac{1}{2}$ | 12 $\frac{3}{8}$ | 7 $\frac{7}{16}$ | 5 $\frac{1}{4}$ x9 $\frac{3}{4}$ | 14 $\frac{1}{2}$ | 6 | 27 |

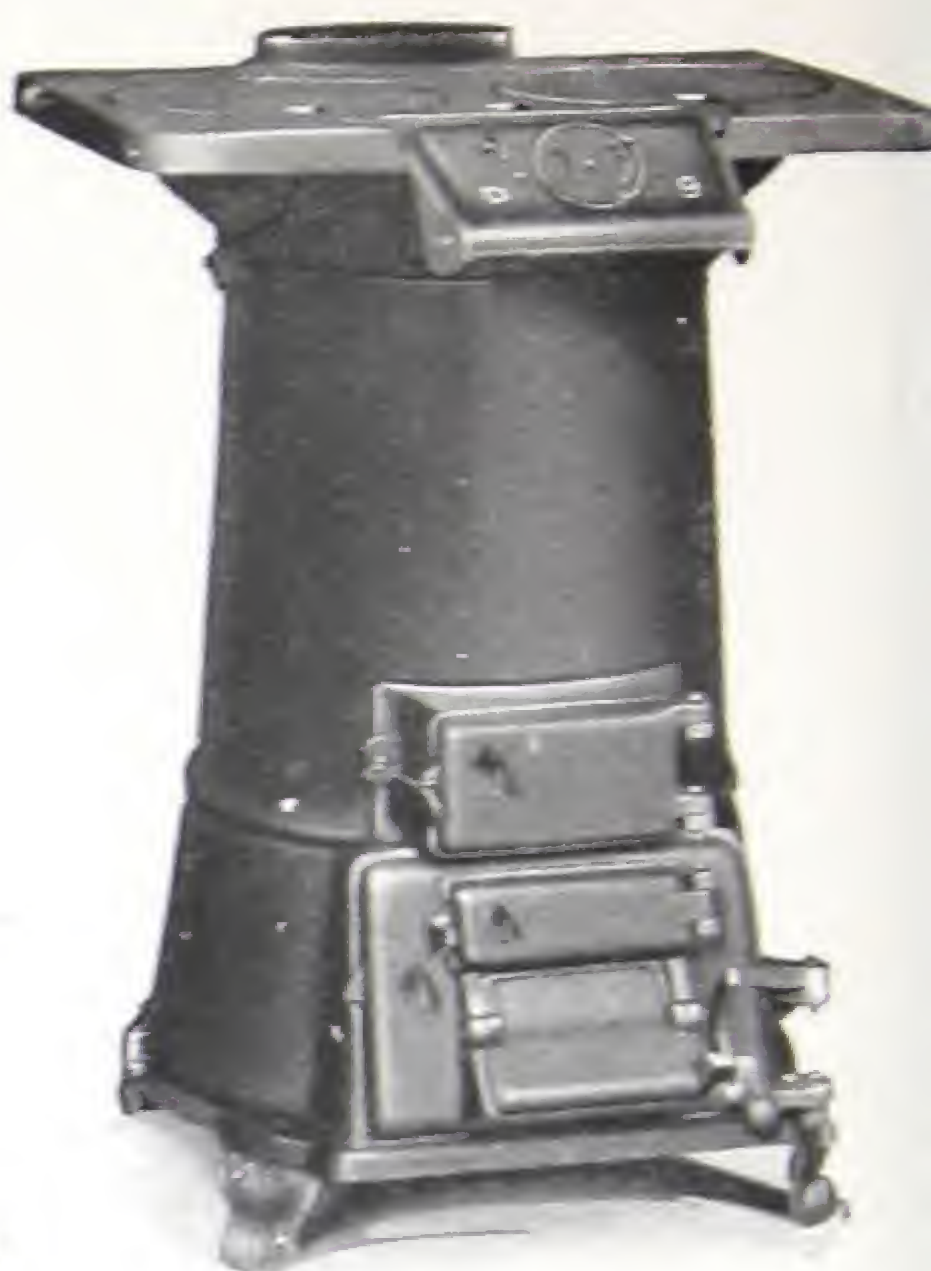
Invincible Washday

| No. | A | C | E | K | | P | R |
|------|------------------|-----------------|-----------------|----------------------------------|------------------|---|------------------|
| .... | 20 $\frac{1}{2}$ | 6 $\frac{7}{8}$ | 4 $\frac{3}{8}$ | 4 $\frac{1}{4}$ x7 $\frac{1}{4}$ | 13 $\frac{1}{4}$ | 6 | 23 $\frac{1}{4}$ |

Safford-Triumph-Mogul Water and Laundry Heaters



Nos. H-12, H-22, H-32



Toro



York or Bronco

For data and list prices, see page 63.
For measurements, see pages 64, 65, 66, 67.

Safford-Triumph-Mogul Water and Laundry Heaters

List Prices and Data

| Pattern Name | No. | Nom. Diam. Grate Inches | Grate | Size Outlets Inches | Cap- city in Gallons | List Price |
|--|-------|----------------------------------|--------------|---------------------------|-------------------------------|---------------|
| Bronco Laundry..... | No.-8 | 8 | Slide-centre | 1-1 | 40 | \$35.00 |
| " " | No.-9 | 8 | " | 1-1 | 40 | 36.50 |
| York with Ashpan | No.-8 | 8 | " | 1-1 | 40 | 38.00 |
| " " | No.-9 | 8 | " | 1-1 | 40 | 40.00 |
| Toro Laundry..... | 8-D | 10 | " | 1-1 ½ | 100 | 60.00 |
| " " | 9-D | 10 | " | 1-1 ½ | 100 | 63.00 |
| Triumph-Mogul, with Base Plate and Legs..... | T-00 | 10 | " | 1-1 ½ | 60 | 45.00 |
| " | T-0 | 10 | " | 1-1 ½ | 90 | 63.00 |
| " | T-101 | 10 | " | 1-1 ½ | 140 | 73.00 |
| Triumph-Mogul..... | H-10 | 12 | Rocking | 3-1 ½ | 190 | 120.00 |
| | H-12 | 12 | " | 3-1 ½ | 210 | 143.00 |
| | H-20 | 15 | " | 3-2 | 380 | 171.00 |
| | H-22 | 15 | " | 3-2 | 425 | 203.00 |
| | H-30 | 18 | " | 3-2 | 600 | 210.00 |
| | H-32 | 18 | " | 3-2 | 660 | 249.00 |

Nos. H-10, H-20, H-30 are without dome sections.

Nos. H-12, H-22, H-32 are equipped with dome sections.

Additional measurements, page 67.

Size of top No. 8 Bronco, 14 x 20.

Size of top No. 9 Bronco, 15 x 21 ½.

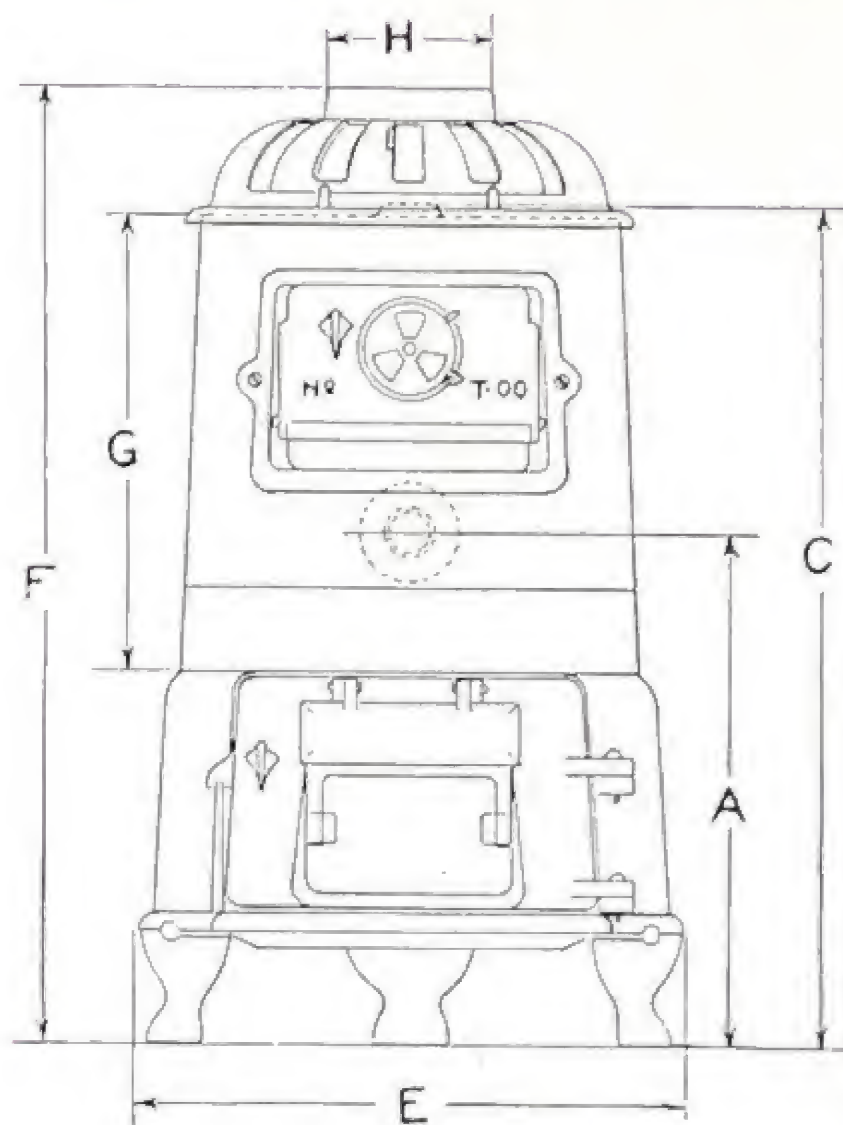
Size of top No. 8 York, 14 x 20.

Size of top No. 9 York, 15 x 21 ½.

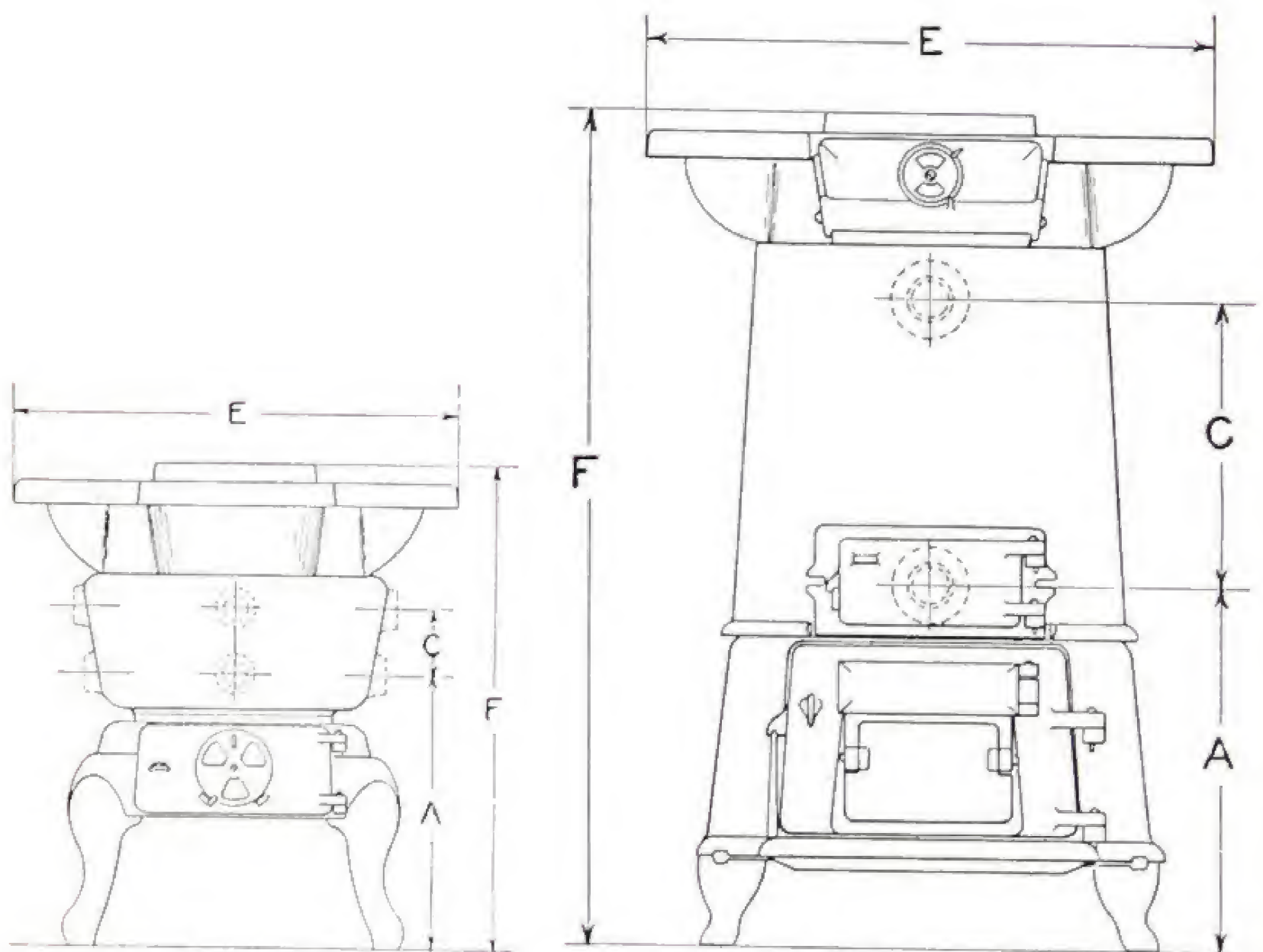
Size of top Toro No. 8-D, 14 x 20.

Size of top Toro No. 9-D, 15 x 21 ½.

Safford-Triumph-Mogul Water and Laundry Heaters



T-00



Branco

Toro

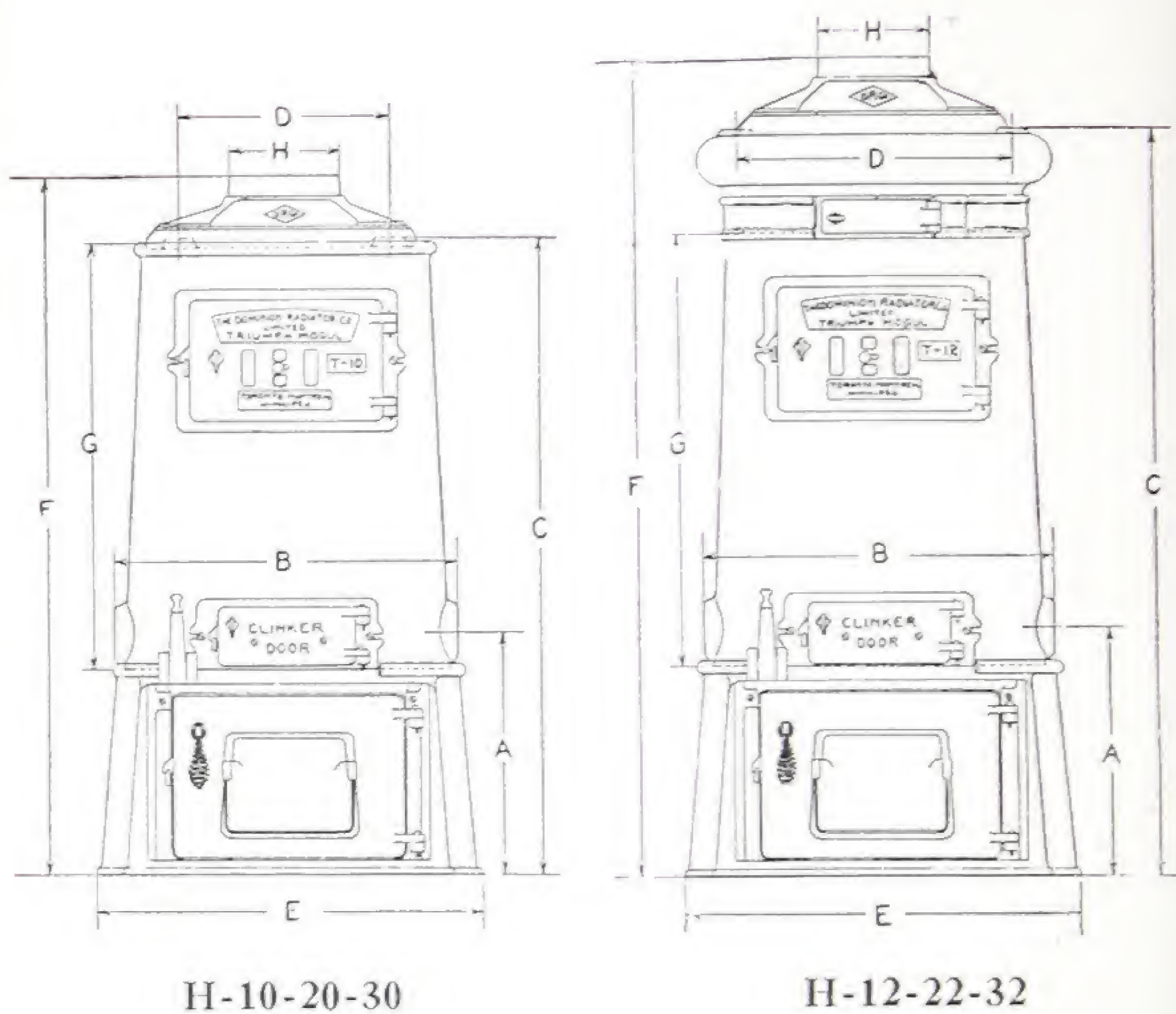
York same as Bronco, except with large ashpan.
For Measurements, see page 67.

Safford-Triumph-Magat Water Heaters



T-101
For Measurements see page 50
50

Safford-Triumph-Mogul Water Heaters



For Measurements, see page 67.

Safford-Triumph-Mogul Water and Laundry Heaters

| Pattern | No. | A | B | C | D | E | F | G | H |
|-------------------|-------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------|
| Bronco..... | 8 | $12\frac{3}{4}$ | .... | $2\frac{3}{4}$ | .... | 20 | $21\frac{1}{2}$ | .... | .... |
| " | 9 | $12\frac{3}{4}$ | .... | $2\frac{3}{4}$ | .... | $21\frac{1}{2}$ | $21\frac{1}{2}$ | .... | .... |
| York..... | 8 | $18\frac{3}{8}$ | .... | $2\frac{3}{4}$ | .... | 20 | $22\frac{1}{2}$ | .... | .... |
| " | 9 | $18\frac{3}{8}$ | .... | $2\frac{3}{4}$ | .... | $21\frac{1}{2}$ | $22\frac{1}{2}$ | .... | .... |
| Toro Laundry..... | 8-D | $12\frac{1}{2}$ | .... | $10\frac{1}{4}$ | .... | 20 | 30 | .... | .... |
| " | 9-D | $12\frac{1}{2}$ | .... | $10\frac{1}{4}$ | .... | $21\frac{1}{2}$ | 30 | .... | .... |
| Triumph Mogul.... | T-00 | 15 | .... | $24\frac{1}{2}$ | .... | 18 | $28\frac{1}{2}$ | $13\frac{1}{2}$ | 5 |
| " " | T-0 | 15 | .... | $31\frac{1}{2}$ | .... | 18 | 35 | $20\frac{1}{2}$ | 5 |
| " " | T-101 | $12\frac{3}{4}$ | .... | 33 | .... | 18 | 37 | 22 | 5 |
| " " | H-10 | $13\frac{1}{2}$ | $18\frac{1}{2}$ | $36\frac{3}{4}$ | 12 | 21 | $41\frac{1}{4}$ | $25\frac{1}{4}$ | 6 |
| " " | H-12 | $13\frac{1}{2}$ | $18\frac{1}{2}$ | $41\frac{1}{2}$ | $14\frac{1}{2}$ | 21 | $46\frac{3}{4}$ | $25\frac{1}{4}$ | 6 |
| " " | H-20 | $13\frac{3}{4}$ | 21 | $41\frac{1}{2}$ | $14\frac{3}{4}$ | 23 | $46\frac{1}{4}$ | $29\frac{1}{2}$ | 6 |
| " " | H-22 | $13\frac{3}{4}$ | 21 | $47\frac{1}{2}$ | $16\frac{3}{4}$ | 23 | $52\frac{1}{4}$ | $29\frac{1}{2}$ | 6 |
| " " | H-30 | $13\frac{3}{4}$ | $24\frac{1}{2}$ | $41\frac{1}{2}$ | 17 | 26 | $46\frac{1}{2}$ | $29\frac{1}{2}$ | 7 |
| " " | H-32 | $13\frac{3}{4}$ | $24\frac{1}{2}$ | 48 | $17\frac{1}{2}$ | 26 | $52\frac{1}{2}$ | $29\frac{1}{2}$ | 7 |

Fire door opening, H-10—H-12, $8\frac{1}{2}''$ x $9\frac{1}{2}''$. H-20-22-30-32, $10\frac{3}{4}''$ x $10''$.

See pages 64, 65, 66.

Ideal and Safford Boiler Ratings

Fuel Basis for Ratings

IDEAL ARCO, MOGUL AND SAFFORD BOILERS (except "Down-Draft" type).—The ratings are based on use of good grades of anthracite coal, since that fuel is more nearly uniform in heating effects. For the smaller sizes of Boilers coal of regular "stove" or "range" size is in most cases the best to use; while in the larger boilers "egg" size will be found more suitable. Other kinds of fuel, preferably "caking" soft coals, may be used if due consideration is given to differences in calorific power in space occupied by a given weight of the fuel, and in amount of attendance necessary.

IDEAL DOWN-DRAFT SMOKELESS BOILERS.—The ratings are based upon the use of an average grade of "free-burning" soft coal, a fuel obtainable in all localities. If "caking" coals or those of inferior qualities are to be used, proper allowance should be made.

Rating Conditions

The ratings for Ideal Safford Sectional Water and Steam and Arco and Safford Round Steam Boilers provide that all piping (mains and risers, flow and return), in addition to the direct radiation to be used, shall be figured as radiating surface in estimating the size of the Boiler required.

These ratings are for direct radiation. When any other heating surface than direct radiation is to be supplied, increased Boiler capacity must be figured according to the demand in each case.

When indirect radiation is to be used not less than 75 per cent. increase over direct radiation should be figured in determining size of Boiler required.

Arco and Mogul Round Water Boiler

The ratings on Arco and Mogul Water Boilers are based on their capacity to maintain a temperature of 170 degrees in the water in the Radiators throughout a period of eight hours on one firing. It is of course assumed that sufficient radiating surface has been allowed in the various rooms to maintain a temperature of 70 degrees Fahrenheit during zero weather. Under more severe climatic conditions a reasonable allowance should be made to provide for the additional tax imposed on the Boiler. A liberal allowance has been made for mains, returns, risers, etc., so that the ratings shown indicate the actual capacity of these Boilers in direct radiation.

Guarantee and Coverings

IDEAL and SAFFORD Boilers are guaranteed only to the extent of furnishing new castings by freight for any found defective in manufacture. On account of the varying conditions surrounding their installation, we do not guarantee our Boilers otherwise.

Both on account of increased efficiency and greater economy, we recommend that all Boilers be thoroughly protected by a substantial covering of asbestos.

Information Required for Ordering Boilers and Boiler Repairs

State plainly the catalogue, name, number and rated capacity of Boiler required; also number of square feet of Direct and if any, Direct-Indirect or Hot Blast Radiation, that Boiler is to take care of.

When ordering repair parts for any of the Boilers listed in this catalogue, or for that matter for any other boiler, first give the size, number and catalogue name, or name on front of the Boiler. Next give the factory or serial number. This is usually found on the little brass plate on one of the front doors. It is well to mention all letters or numbers in order in which they appear on part required. In case it is impossible to give any of the above requirements, send a sketch having dimensions marked on it, and a rough detailed description of part wanted. It will also be well to mention year number where same appears on front of Boiler, and if possible, the year in which the Boiler was installed, or better still, the date and number of the invoice pertaining to it. Especially mention whether the boiler is Round or Square. Where Round, if it is a grate bar that is required, mention which one, numbering from the front, and whether it has a lug or hook on it. If it is a section that is required, mention which one, numbering from the fire-pot. If it is a door or door-frame, especially mention which one.

Where section is required for a Sectional Boiler, mention which one, numbering from the front, and whether same has any tapped openings, and the size of the tapping, and whether the tapping is required or not. Where it is a grate bar, mention which one, numbering from the front, and whether it shakes on the left-hand side or the right-hand side.

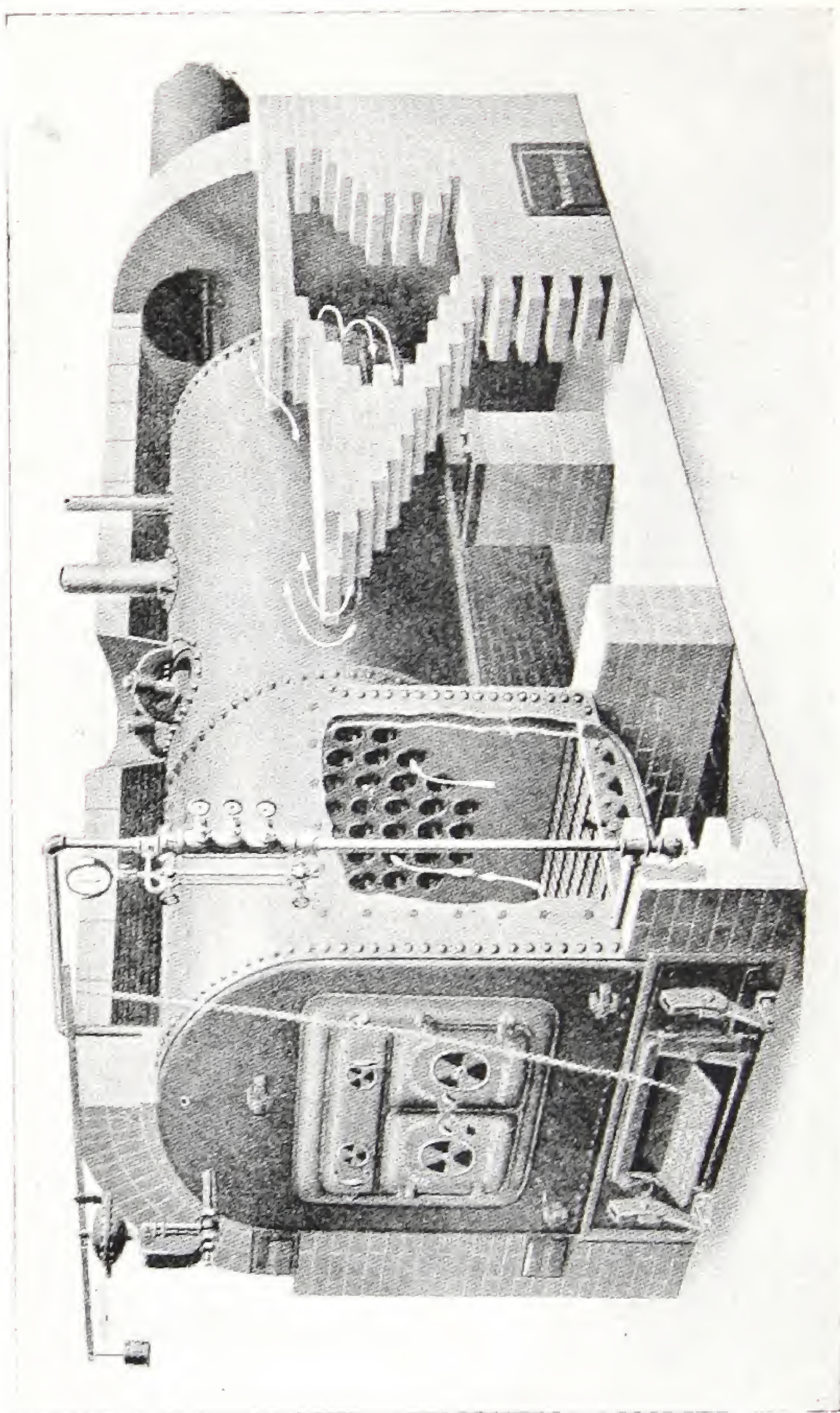
Where a Boiler has no serial number on the little brass plate, please mention the fact that it has no serial number.

When ordering repairs for a Boiler, send order direct to the Office or Branch from which Boiler was purchased.

With these particulars we will be able to ship repairs promptly.

Give full shipping instructions.

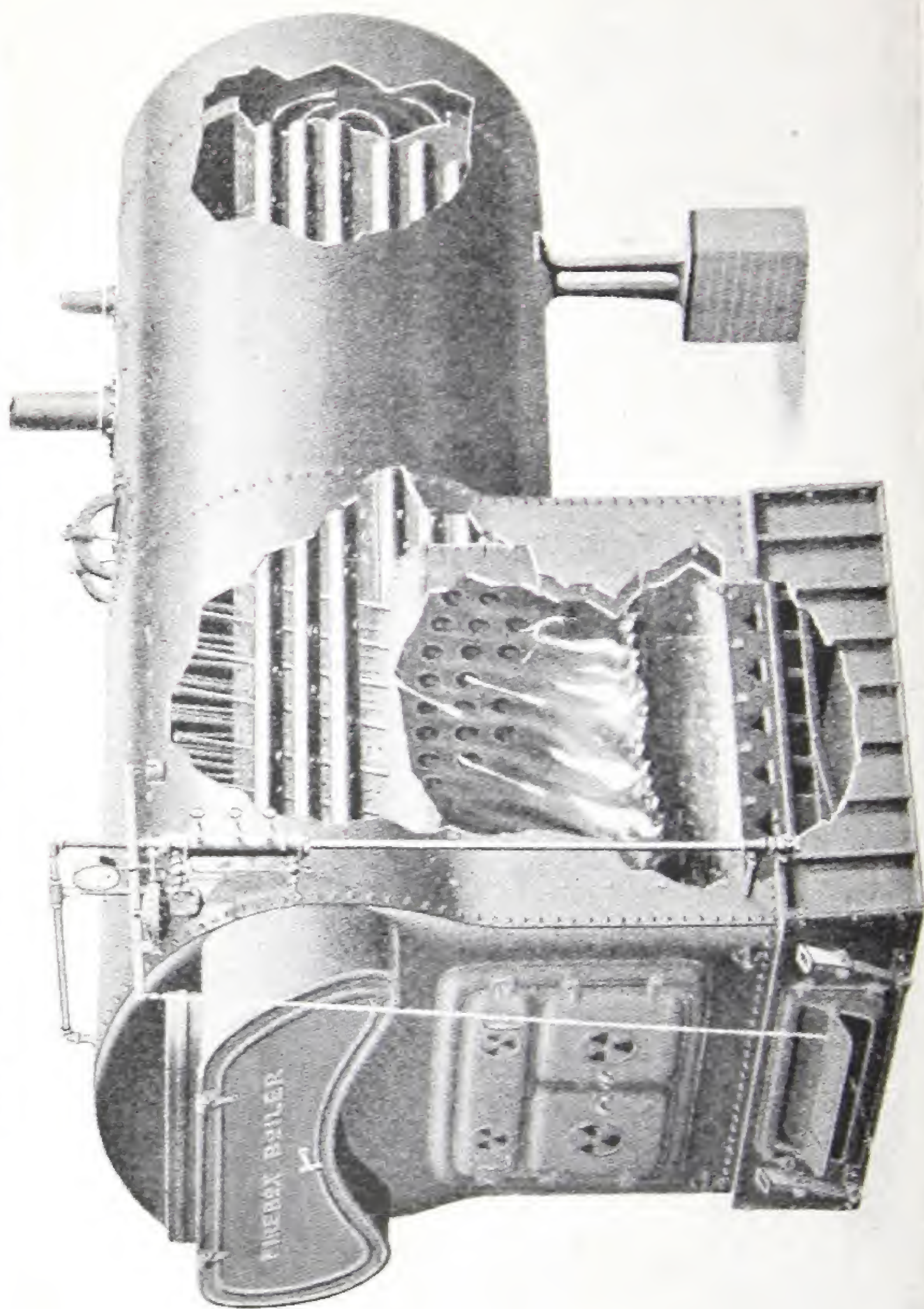
Sirdar Standard Firebox Brickset Heating Boiler



These Boilers will heat all the radiation shown by their capacity. Prices on application

| Number of Boiler..... | 1 | 2 | 3 | 4 | 5 | 6 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|--|-------|-------|-------|-------|-------|-------|------|------|------|------|------|-------|-------|-------|-------|--------|-------|-------|-------|
| Diameter Boiler.....in. | 30 | 30 | 30 | 36 | 36 | 36 | 42 | 42 | 48 | 48 | 48 | 54 | 54 | 60 | 60 | 66 | 66 | 72 | 72 |
| Length Boiler over all.....ft. | 6½ | 7½ | 8½ | 7½ | 9 | 10½ | 10 | 11½ | 10½ | 12 | 13½ | 14 | 16½ | 15½ | 18 | 16 | 18 | 16 | 18 |
| Width of Firebox.....in. | 24 | 24 | 24 | 30 | 30 | 30 | 36 | 36 | 42 | 42 | 42 | 48 | 48 | 53 | 53 | 59 | 59 | 65 | 65 |
| Length of Firebox.....in. | 26 | 32 | 38 | 32 | 38 | 44 | 44 | 50 | 44 | 50 | 56 | 56 | 62 | 62 | 68 | 62 | 68 | 68 | 74 |
| Height of Firebox.....in. | 35 | 35 | 35 | 38 | 38 | 38 | 41 | 41 | 44 | 44 | 44 | 49 | 49 | 54 | 54 | 59 | 59 | 64 | 64 |
| Heating Surface.....sq. ft. | 113 | 131 | 147 | 180 | 215 | 250 | 305 | 350 | 368 | 420 | 472 | 560 | 673 | 743 | 873 | 954 | 1080 | 1167 | 1329 |
| Area of Grate.....sq. ft. | 4.4 | 5.4 | 6.4 | 6.8 | 8.0 | 9.3 | 11.1 | 12.6 | 12.9 | 14.7 | 16.5 | 18.8 | 20.8 | 22.9 | 25.1 | 25.5 | 28.0 | 30.8 | 33.5 |
| Diameter of Breeching.....in. | 12 | 14 | 16 | 16 | 18 | 18 | 20 | 22 | 22 | 24 | 24 | 28 | 28 | 32 | 32 | 32 | 32 | 36 | 36 |
| Diameter of Stack.....in. | 12 | 12 | 14 | 14 | 16 | 16 | 18 | 20 | 20 | 22 | 22 | 26 | 26 | 30 | 30 | 30 | 30 | 34 | 34 |
| Minimum Height of Stack.....in. | 40 | 40 | 40 | 40 | 40 | 45 | 45 | 45 | 50 | 50 | 50 | 50 | 50 | 55 | 55 | 60 | 60 | 60 | 60 |
| Diameter Breeching, 2 Boilers.....in. | ..... | ..... | ..... | ..... | ..... | ..... | 28 | 32 | 32 | 32 | 34 | 36 | 36 | 40 | 40 | 40 | 42 | 44 | 46 |
| Diameter Stack, 2 Boilers.....in. | ..... | ..... | ..... | ..... | ..... | ..... | 26 | 28 | 28 | 30 | 32 | 34 | 34 | 36 | 36 | 36 | 38 | 40 | 42 |
| Minimum Height Stack, 2 Boilers.....ft. | ..... | ..... | ..... | ..... | ..... | ..... | 50 | 50 | 50 | 50 | 50 | 55 | 60 | 70 | 70 | 70 | 70 | 70 | 70 |
| Size of Steam Opening.....in. | 4 | 4 | 5 | 5 | 6 | 6 | 6 | 6 | 6 | 6 | 7 | 7 | 7 | 7 | 7 | 8 | 8 | 8 | 8 |
| Size of Return.....in. | 2½ | 2½ | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 6 | 6 | 6 | 6 |
| Size of Safety Valve.....in. | 1½ | 2 | 2 | 2 | 2 | 2½ | 2½ | 3 | 3 | 3½ | 3½ | 4 | 4 | 4½ | 4½ | Two 3½ | Two 4 | Two 4 | Two 4 |
| Height of Water Line.....in. | 52 | 52 | 52 | 55 | 55 | 55 | 58 | 58 | 61 | 61 | 61 | 66 | 66 | 75 | 75 | 80 | 80 | 85 | 85 |
| Height from Floor to Top of Brick Work.....in. | 70 | 70 | 70 | 77 | 77 | 77 | 83 | 83 | 90 | 90 | 90 | 96 | 96 | 108 | 108 | 114 | 114 | 120 | 120 |
| Capacity, Steam.....sq. ft. | 900 | 1050 | 1200 | 1400 | 1700 | 2000 | 2600 | 3000 | 3500 | 4000 | 4500 | 5500 | 6500 | 7500 | 8700 | 10000 | 11000 | 12000 | 14000 |
| Capacity, Water.....sq. ft. | 1500 | 1700 | 2000 | 2300 | 2800 | 3300 | 4300 | 5000 | 5800 | 6600 | 7400 | 9100 | 10700 | 12400 | 14400 | 16500 | 18200 | 19800 | 23100 |
| Approximate Weight, pounds..... | 2400 | 2700 | 2900 | 3300 | 3700 | 4200 | 5400 | 6000 | 6700 | 7300 | 8000 | 10600 | 11900 | 14400 | 16000 | 17800 | 19100 | 21700 | 23500 |

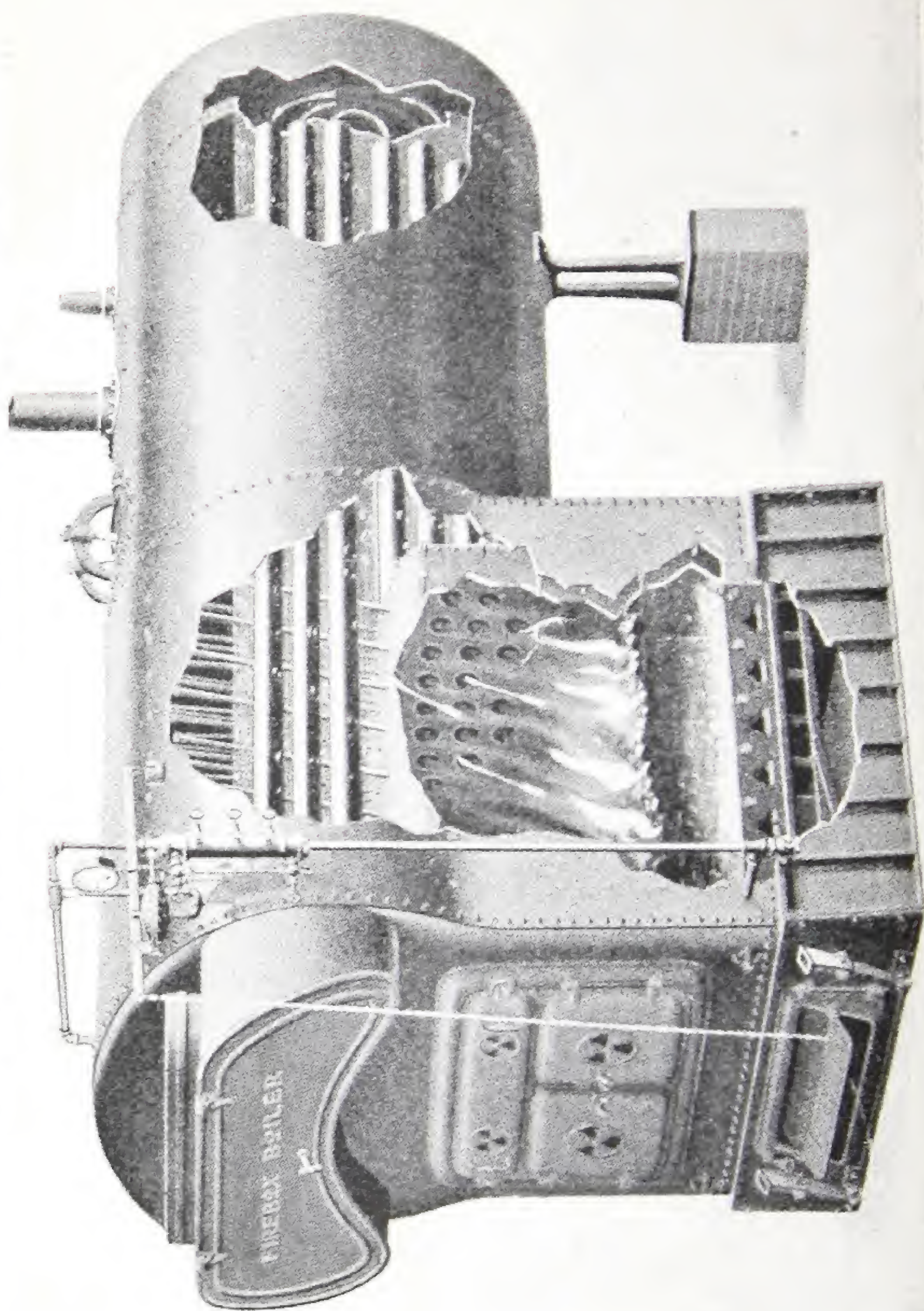
Sirdar Portable Firebox Heating Boiler



These Boilers will heat all the radiation shown by their capacity. Prices on application

| Number of Boiler..... | 407 | 408 | 409 | 410 | 411 | 412 | 413 | 414 |
|---|------|------|------|------|------|-------|-------|-------|
| Diameter Boiler.....in. | 48 | 48 | 48 | 54 | 54 | 54 | 60 | 60 |
| Length Boiler.....ft. in. | 8-7 | 9-6 | 11-1 | 10-0 | 11-1 | 12-1 | 12-5 | 13-7 |
| Width of Firebox.....in. | 36 | 36 | 36 | 42 | 42 | 42 | 48 | 48 |
| Length of Firebox.....in. | 38 | 44 | 50 | 44 | 50 | 56 | 56 | 62 |
| Height of Firebox.....in. | 41½ | 41½ | 41½ | 44 | 44 | 44 | 49 | 49 |
| Heating Surface.....sq. ft. | 278 | 310 | 373 | 416 | 465 | 515 | 565 | 626 |
| Area of Grate.....sq. ft. | 9.6 | 11.1 | 12.6 | 12.9 | 14.7 | 16.5 | 18.8 | 20.8 |
| Diameter Breeching.....in. | 22 | 22 | 22 | 24 | 24 | 24 | 26 | 26 |
| Diameter Stack.....in. | 20 | 20 | 20 | 22 | 22 | 22 | 24 | 24 |
| Minimum Height Stack.....ft. | 50 | 50 | 55 | 55 | 55 | 60 | 60 | 60 |
| Diameter Breeching, 2 Boilers.....in. | 30 | 30 | 30 | 34 | 34 | 34 | 38 | 38 |
| Diameter Stack, 2 Boilers.....in. | 28 | 28 | 28 | 31 | 31 | 31 | 34 | 34 |
| Minimum Height Stack, 2 Boilers.....ft. | 60 | 60 | 65 | 65 | 65 | 70 | 70 | 70 |
| Size of Steam Opening.....in. | 6 | 6 | 6 | 6 | 6 | 6 | 7 | 7 |
| Size of Return.....in. | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 5 |
| Size of Safety Valve.....in. | 2½ | 3 | 3 | 3½ | 3½ | 3½ | 4 | 4 |
| Height of Water Line.....in. | 71 | 71 | 71 | 76 | 76 | 76 | 83 | 83 |
| Height Floor to Top of Shell.....in. | 84 | 84 | 84 | 89 | 89 | 89 | 98 | 98 |
| Distance Required to open Rear Flue Doors.....in. | 25 | 25 | 25 | 28 | 28 | 28 | 30 | 30 |
| Capacity, Steam.....sq. ft. | 2500 | 2900 | 3500 | 4000 | 4500 | 5000 | 5500 | 6000 |
| Capacity, Water.....sq. ft. | 4100 | 4800 | 5800 | 6600 | 7400 | 8300 | 9100 | 9900 |
| Approximate Weight, pounds..... | 6900 | 7400 | 8300 | 9000 | 9800 | 10600 | 13200 | 14100 |

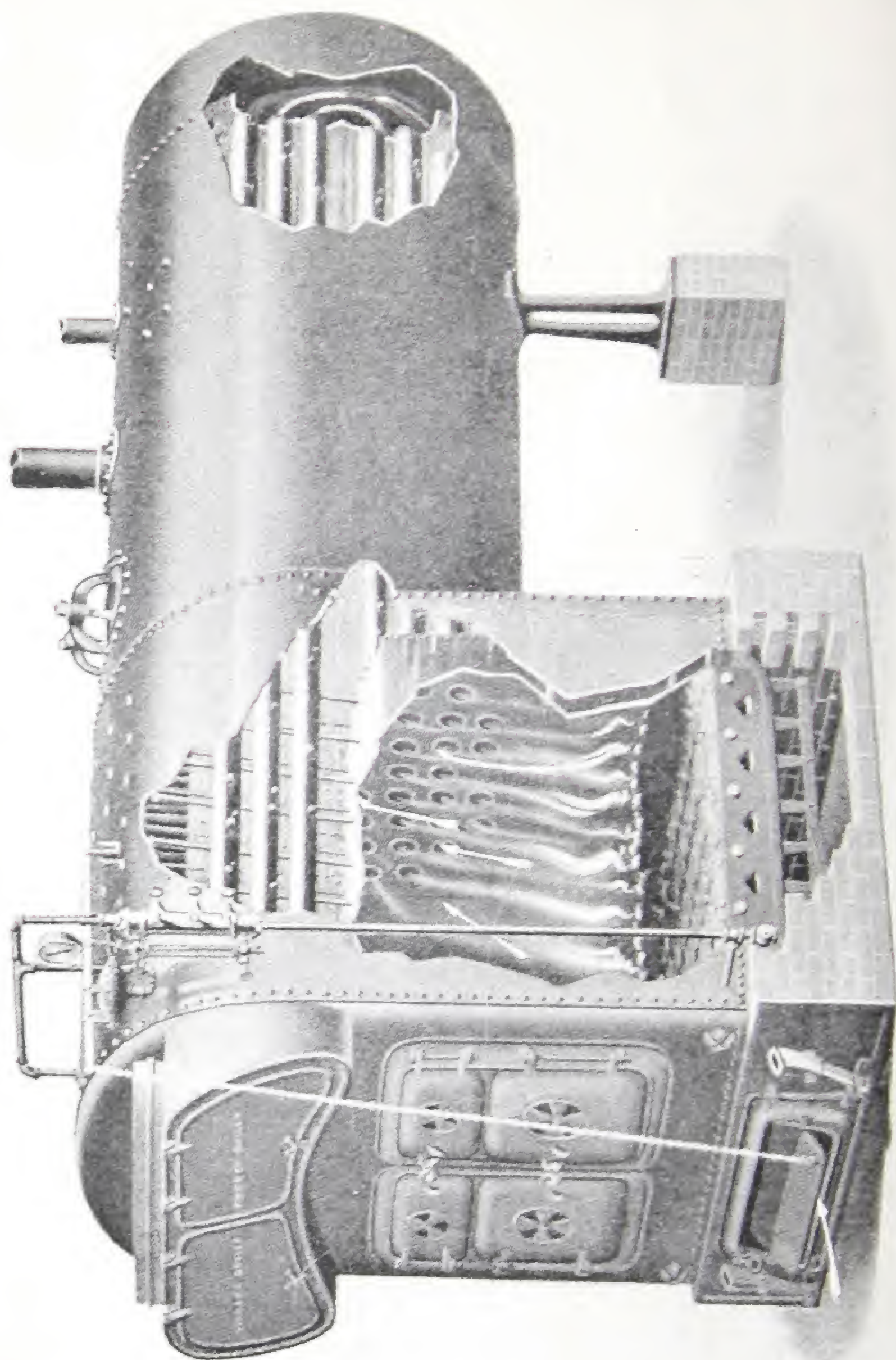
Sirdar Portable Firebox Heating Boiler



These Boilers will heat all the radiation shown by their capacity. Prices on application

| Number of Boiler..... | 407 | 408 | 409 | 410 | 411 | 412 | 413 | 414 |
|---|------|------|------|------|------|-------|-------|-------|
| Diameter Boiler.....in. | 48 | 48 | 48 | 54 | 54 | 54 | 60 | 60 |
| Length Boiler.....ft. in. | 8-7 | 9-6 | 11-1 | 10-0 | 11-1 | 12-1 | 12-5 | 13-7 |
| Width of Firebox.....in. | 36 | 36 | 36 | 42 | 42 | 42 | 48 | 48 |
| Length of Firebox.....in. | 38 | 44 | 50 | 44 | 50 | 56 | 56 | 62 |
| Height of Firebox.....in. | 41½ | 41½ | 41½ | 44 | 44 | 44 | 49 | 49 |
| Heating Surface.....sq. ft. | 278 | 310 | 373 | 416 | 465 | 515 | 565 | 626 |
| Area of Grate.....sq. ft. | 9.6 | 11.1 | 12.6 | 12.9 | 14.7 | 16.5 | 18.8 | 20.8 |
| Diameter Breeching.....in. | 22 | 22 | 22 | 24 | 24 | 24 | 26 | 26 |
| Diameter Stack.....in. | 20 | 20 | 20 | 22 | 22 | 22 | 24 | 24 |
| Minimum Height Stack.....ft. | 50 | 50 | 55 | 55 | 55 | 60 | 60 | 60 |
| Diameter Breeching, 2 Boilers.....in. | 30 | 30 | 30 | 34 | 34 | 34 | 38 | 38 |
| Diameter Stack, 2 Boilers.....in. | 28 | 28 | 28 | 31 | 31 | 31 | 34 | 34 |
| Minimum Height Stack, 2 Boilers.....ft. | 60 | 60 | 65 | 65 | 65 | 70 | 70 | 70 |
| Size of Steam Opening.....in. | 6 | 6 | 6 | 6 | 6 | 6 | 7 | 7 |
| Size of Return.....in. | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 5 |
| Size of Safety Valve.....in. | 2½ | 3 | 3 | 3½ | 3½ | 3½ | 4 | 4 |
| Height of Water Line.....in. | 71 | 71 | 71 | 76 | 76 | 76 | 83 | 83 |
| Height Floor to Top of Shell.....in. | 84 | 84 | 84 | 89 | 89 | 89 | 98 | 98 |
| Distance Required to open Rear Flue Doors.....in. | 25 | 25 | 25 | 28 | 28 | 28 | 30 | 30 |
| Capacity, Steam.....sq. ft. | 2500 | 2900 | 3500 | 4000 | 4500 | 5000 | 5500 | 6000 |
| Capacity, Water.....sq. ft. | 4100 | 4800 | 5800 | 6600 | 7400 | 8300 | 9100 | 9900 |
| Approximate Weight, pounds..... | 6900 | 7400 | 8300 | 9000 | 9800 | 10600 | 13200 | 14100 |

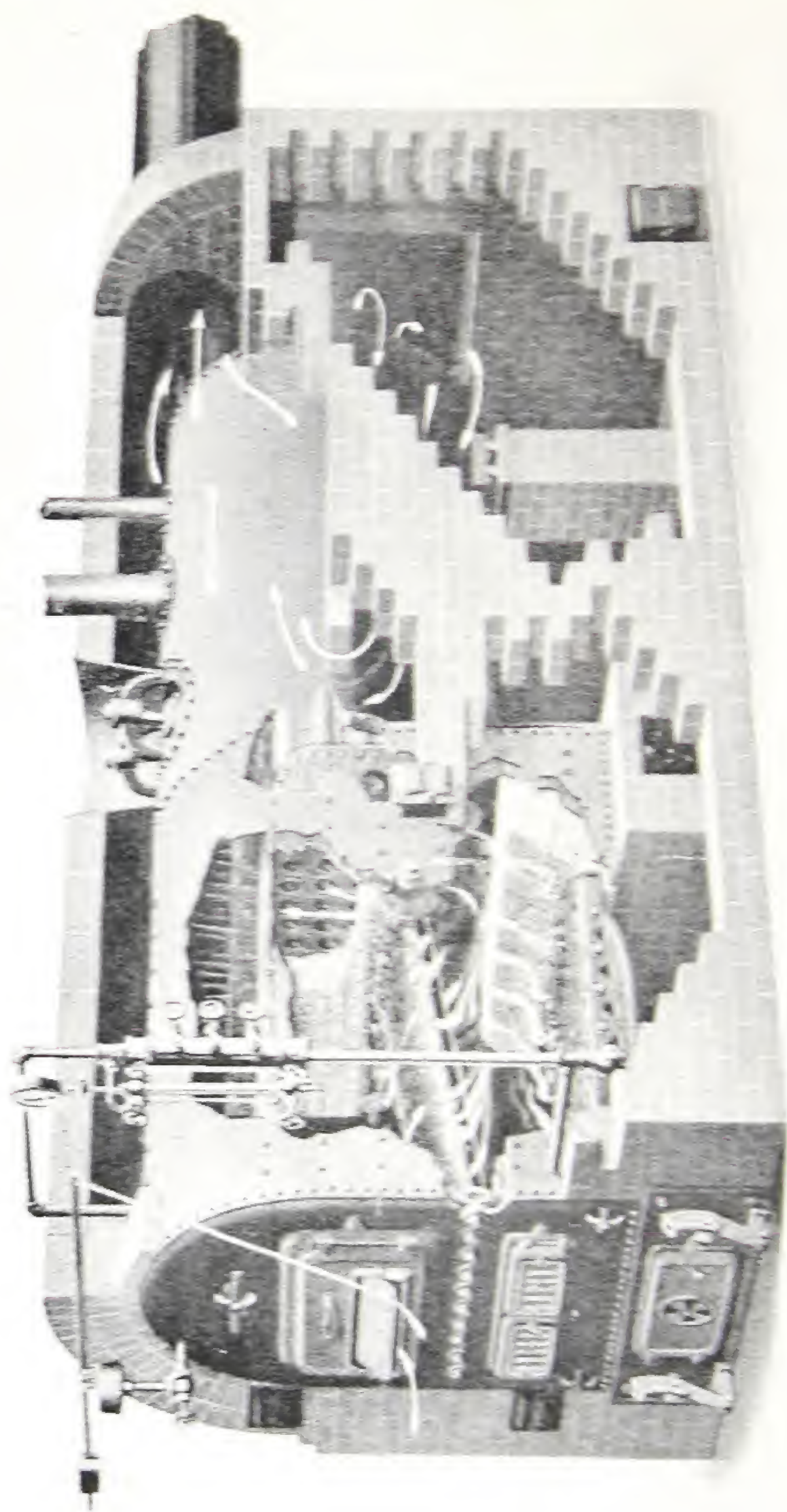
Sirdar Portable Firebox Heating Boiler



These Boilers will heat all the radiation shown by their capacity. Prices on application

| Number of Boiler..... | 415 | 416 | 417 | 418 | 419 | 420 |
|---|-------|-------|--------|-------|--------|--------|
| Diameter Boiler.....in. | 60 | 60 | 66 | 66 | 72 | 72 |
| Length Boiler.....ft. in. | 14-4 | 16-2 | 15-9 | 17-4 | 15-11 | 17-6 |
| Width of Firebox.....in. | 53 | 53 | 59 | 59 | 65 | 65 |
| Length of Firebox.....in. | 56 | 62 | 62 | 68 | 68 | 74 |
| Height of Firebox.....in. | 49 | 49 | 52 | 52 | 54½ | 54½ |
| Heating Surface.....sq. ft. | 676 | 778 | 929 | 1040 | 1168 | 1303 |
| Area of Grate.....sq. ft. | 20.7 | 22.9 | 25.5 | 28.0 | 30.8 | 33.5 |
| Diameter Breeching.....in. | 28 | 28 | 30 | 32 | 34 | 34 |
| Diameter Stack.....in. | 26 | 26 | 28 | 30 | 32 | 32 |
| Minimum Height Stack.....ft. | 65 | 65 | 65 | 70 | 70 | 70 |
| Diameter Breeching, 2 Boilers.....in. | 40 | 40 | 44 | 46 | 50 | 50 |
| Diameter Stack, 2 Boilers.....in. | 36 | 36 | 40 | 42 | 46 | 46 |
| Minimum Height Stack, 2 Boilers.....ft. | 75 | 75 | 75 | 80 | 80 | 80 |
| Size of Steam Opening.....in. | 7 | 7 | 8 | 8 | 8 | 8 |
| Size of Return.....in. | 5 | 5 | 6 | 6 | 6 | 6 |
| Size of Safety Valve.....in. | 4 | 4½ | Two 3½ | Two 4 | Two 4½ | Two 4½ |
| Height of Water Line.....in. | 87 | 87 | 90 | 90 | 96 | 96 |
| Height Floor to Top of Shell.....in. | 101 | 101 | 107 | 107 | 113 | 113 |
| Distance Required to open Rear Flue Doors.....in. | 30 | 30 | 35 | 35 | 37 | 37 |
| Capacity, Steam.....sq. ft. | 7000 | 8000 | 9500 | 11000 | 13000 | 15000 |
| Capacity, Water.....sq. ft. | 11600 | 13200 | 15700 | 18200 | 21500 | 24800 |
| Approximate Weight, pounds..... | 15900 | 17300 | 20400 | 22000 | 24000 | 25700 |

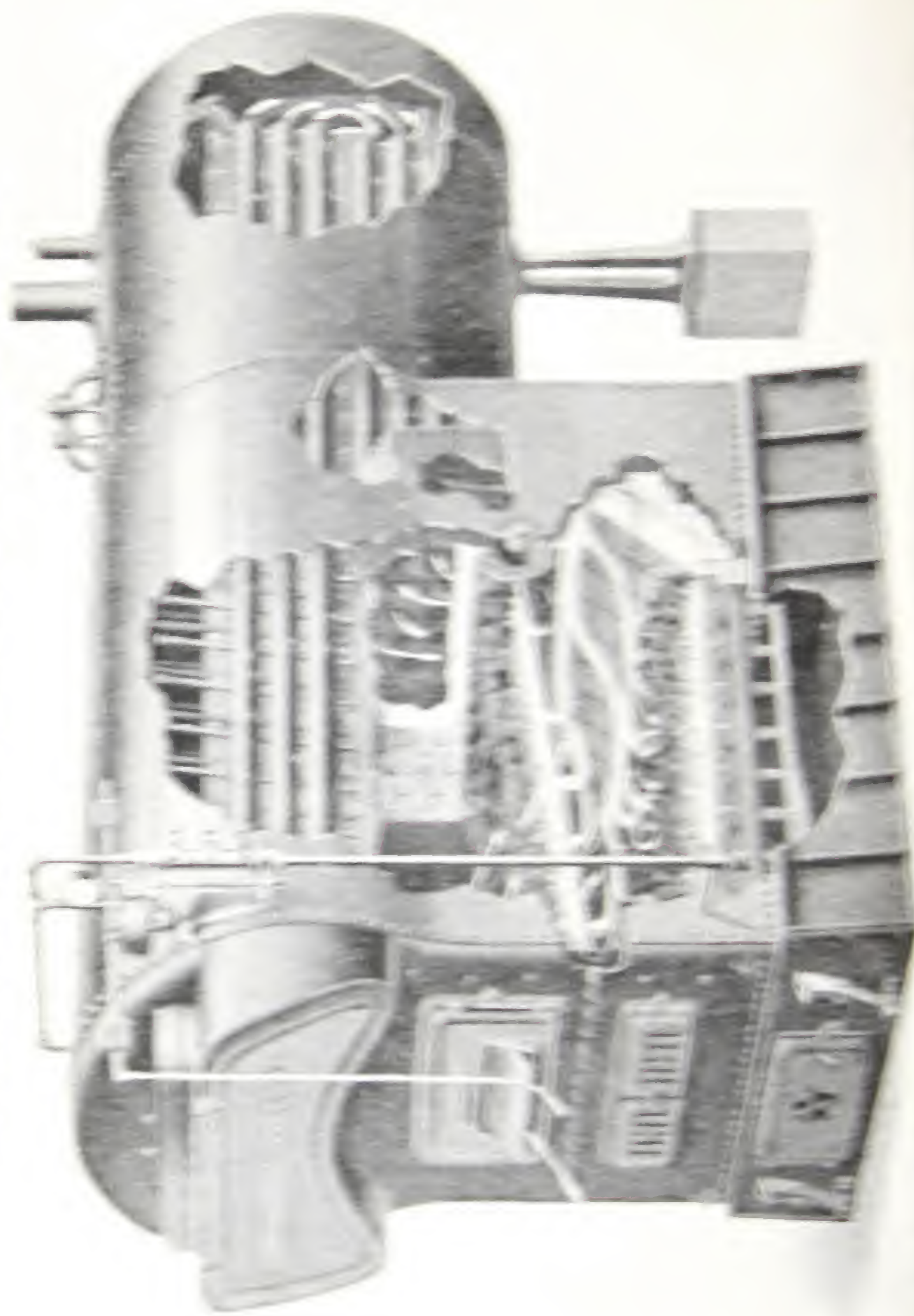
Sirdar Smokeless Firebox Brickset Heating Boiler



These Boilers will heat all the radiation shown by their capacity. Prices on application

| Number of Boiler..... | 107 | 108 | 109 | 110 | 111 | 112 | 113 | 114 | 115 | 116 | 117 | 118 | 119 | 120 |
|---|------|------|-------|------|-------|------|-------|-------|-------|--------|-------|-------|-------|--------|
| Diameter Boiler.....in. | 42 | 42 | 42 | 48 | 48 | 48 | 54 | 54 | 60 | 60 | 66 | 66 | 72 | 72 |
| Length Boiler over all.....ft. in. | 9-10 | 11-4 | 12-11 | 12-4 | 13-10 | 15-4 | 15-10 | 18-4 | 17-10 | 20-4 | 18-4 | 20-4 | 18-4 | 20-4 |
| Width of Firebox.....in. | 36 | 36 | 36 | 42 | 42 | 42 | 48 | 48 | 53 | 53 | 59 | 59 | 65 | 65 |
| Length of Firebox.....in. | 54 | 60 | 66 | 66 | 72 | 78 | 78 | 84 | 90 | 96 | 90 | 96 | 96 | 102 |
| Heating Surface.....sq. ft. | 297 | 345 | 393 | 425 | 480 | 535 | 628 | 741 | 839 | 973 | 1064 | 1194 | 1291 | 1456 |
| Area of Upper Grate.....sq. ft. | 8.6 | 10.1 | 11.4 | 11.8 | 13.2 | 15.0 | 17.1 | 19.1 | 21.1 | 23.3 | 23.5 | 25.9 | 28.5 | 31.3 |
| Diameter Breeching.....in. | 22 | 22 | 24 | 24 | 27 | 27 | 30 | 30 | 34 | 34 | 36 | 36 | 38 | 38 |
| Diameter Stack.....in. | 20 | 20 | 22 | 22 | 24 | 24 | 28 | 28 | 32 | 32 | 34 | 34 | 36 | 36 |
| Minimum Height of Stack.....ft. | 50 | 50 | 50 | 50 | 55 | 55 | 60 | 60 | 60 | 60 | 70 | 70 | 70 | 70 |
| Diameter Breeching for 2 Boilers.....in. | 28 | 30 | 32 | 32 | 34 | 34 | 36 | 38 | 42 | 42 | 44 | 45 | 48 | 50 |
| Diameter Stack for 2 Boilers.....in. | 26 | 28 | 30 | 30 | 32 | 32 | 34 | 36 | 38 | 38 | 40 | 42 | 44 | 46 |
| Minimum Height Stack for 2 Boilers.....ft. | 60 | 60 | 60 | 60 | 60 | 60 | 70 | 70 | 70 | 75 | 75 | 80 | 80 | 80 |
| Size of Steam Opening.....in. | 6 | 6 | 6 | 6 | 6 | 7 | 7 | 7 | 7 | 7 | 8 | 8 | 8 | 8 |
| Size of Return.....in. | 4 | 4 | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 6 | 6 | 6 | 6 |
| Size of Safety Valve.....in. | 2½ | 2½ | 3 | 3½ | 3½ | 4 | 4 | 4½ | 4½ | Two 3½ | Two 4 | Two 4 | Two 4 | Two 4½ |
| Height of Water Line.....in. | 58½ | 58½ | 58½ | 61 | 61 | 61 | 66 | 66 | 75 | 75 | 80 | 80 | 85½ | 85½ |
| Height from Floor to Top of Brickwork.....in. | 83 | 83 | 83 | 90 | 90 | 90 | 96 | 96 | 108 | 108 | 114 | 114 | 120 | 120 |
| Capacity, Steam.....sq. ft. | 2600 | 3100 | 3600 | 4000 | 4700 | 5500 | 6500 | 7500 | 8500 | 10000 | 11500 | 13000 | 14000 | 16000 |
| Capacity, Water.....sq. ft. | 4300 | 5100 | 5900 | 6600 | 7800 | 9100 | 10700 | 12400 | 14000 | 16500 | 19000 | 21500 | 23100 | 26400 |
| Approximate Weight, pounds..... | 6200 | 6800 | 7300 | 8500 | 9100 | 9800 | 12500 | 13900 | 16400 | 18000 | 20400 | 22100 | 23800 | 25800 |

Starke Portable Smokeless Firebox Boiler

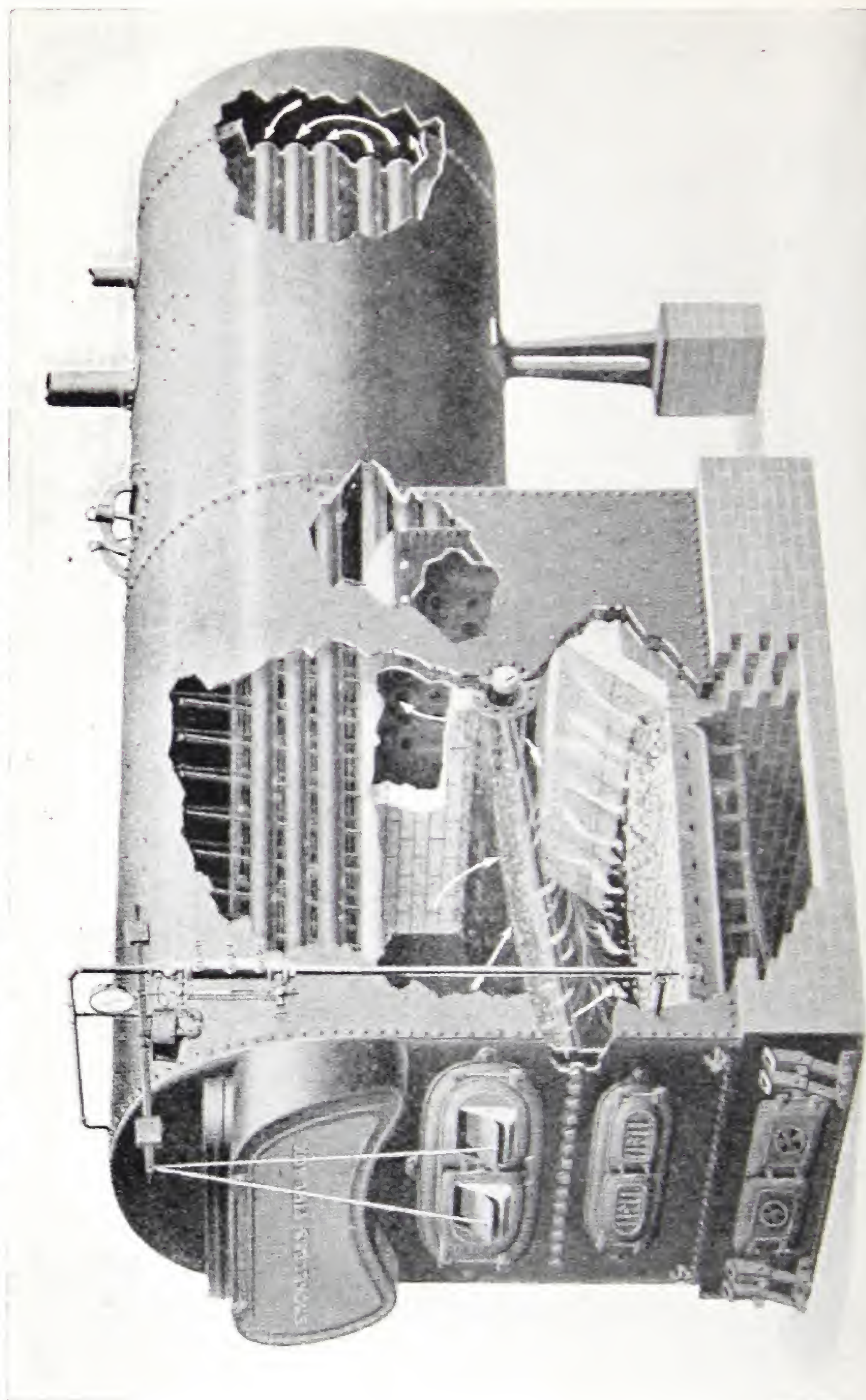


These Boilers will heat all the radiation shown by their capacity. Prices on application

| Number of Boiler..... | 307 | 308 | 309 | 310 | 311 | 312 | 313 | 314 |
|---|------|------|------|-------|-------|-------|-------|-------|
| Diameter Boiler.....in. | 48 | 48 | 48 | 54 | 54 | 54 | 60 | 60 |
| Length Boiler over-all.....ft. in. | 9-1 | 10-5 | 11-5 | 10-11 | 11-11 | 12-11 | 12-11 | 12-11 |
| Width of Firebox.....in. | 36 | 36 | 36 | 42 | 42 | 42 | 48 | 48 |
| Length Firebox.....in. | 54 | 60 | 66 | 72 | 78 | 84 | 78 | 84 |
| Heating Surface.....sq. ft. | 297 | 352 | 391 | 446 | 496 | 546 | 592 | 642 |
| Area of Upper Grate.....sq. ft. | 8.8 | 10.1 | 11.4 | 12.9 | 14.7 | 16.5 | 17.1 | 18.5 |
| Diameter Breeching.....in. | 22 | 22 | 22 | 24 | 24 | 24 | 26 | 26 |
| Diameter Stack.....in. | 20 | 20 | 20 | 22 | 22 | 22 | 24 | 24 |
| Minimum Height of Stack.....ft. | 50 | 55 | 55 | 55 | 55 | 60 | 60 | 60 |
| Diameter Breeching, 2 Boilers.....in. | 30 | 30 | 30 | 34 | 34 | 34 | 38 | 38 |
| Diameter Stack, 2 Boilers.....in. | 28 | 28 | 28 | 31 | 31 | 31 | 34 | 34 |
| Minimum Height Stack, 2 Boilers.....ft. | 60 | 65 | 65 | 65 | 65 | 70 | 70 | 70 |
| Size of Steam Opening.....in. | 6 | 6 | 6 | 6 | 6 | 6 | 7 | 7 |
| Size of Return.....in. | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 5 |
| Size of Safety Valve.....in. | 3 | 3 | 3½ | 3½ | 3½ | 4 | 4 | 4 |
| Height of Water Line.....in. | 71 | 71 | 71 | 76 | 76 | 76 | 83 | 83 |
| Height Floor to Top of Shell.....in. | 84 | 84 | 84 | 89 | 89 | 89 | 98 | 98 |
| Distance Required to open Rear Flue Doors.....in. | 25 | 25 | 25 | 28 | 28 | 28 | 30 | 30 |
| Capacity, Steam.....sq. ft. | 3000 | 3500 | 4000 | 4500 | 5000 | 5500 | 6000 | 6500 |
| Capacity, Water.....sq. ft. | 5000 | 5800 | 6600 | 7400 | 8300 | 9100 | 9900 | 10700 |
| Approximate Weight, pounds..... | 7800 | 8600 | 9300 | 10400 | 11100 | 11900 | 14500 | 15300 |

Cast Iron Base supplied with 307-308-309 only

Sirdar Portable Smokeless Firebox Boiler



These Boilers will heat all the radiation shown by their capacity. Prices on application

| Number of Boiler..... | 315 | 316 | 317 | 318 | 319 | 320 | 321 | 322 |
|---|-------|-------|--------|-------|-------|--------|---------|---------|
| Diameter of Boiler.....in. | 60 | 60 | 66 | 66 | 72 | 72 | 78 | 78 |
| Length Boiler over-all.....ft. in. | 15-3 | 16-3 | 15-9 | 17-9 | 16-7 | 17-11 | 17-10 | 18-10 |
| Width Firebox.....in. | 53 | 53 | 59 | 59 | 65 | 65 | 71 | 71 |
| Length Firebox.....in. | 90 | 96 | 90 | 96 | 96 | 102 | 102 | 108 |
| Heating Surface.....sq. ft. | 721 | 773 | 912 | 1053 | 1204 | 1316 | 1458 | 1549 |
| Area of Upper Grate.....sq. ft. | 20.0 | 21.4 | 23.5 | 25.9 | 28.5 | 29.9 | 32.6 | 34.6 |
| Diameter Breeching.....in. | 28 | 28 | 30 | 32 | 34 | 34 | 36 | 36 |
| Diameter Stack.....in. | 26 | 26 | 28 | 30 | 32 | 32 | 34 | 34 |
| Minimum Height Stack.....ft. | 65 | 65 | 65 | 70 | 70 | 70 | 80 | 90 |
| Diameter Breeching, 2 Boilers.....in. | 40 | 40 | 44 | 46 | 50 | 50 | 52 | 52 |
| Diameter Stack, 2 Boilers.....in. | 36 | 36 | 40 | 42 | 46 | 46 | 48 | 48 |
| Minimum Height Stack, 2 Boilers.....ft. | 75 | 75 | 75 | 80 | 80 | 80 | 90 | 100 |
| Size of Steam Opening.....in. | 7 | 7 | 8 | 8 | 8 | 8 | 8 | 8 |
| Size of Return.....in. | 5 | 5 | 6 | 6 | 6 | 6 | 6 | 6 |
| Size of Safety Valve.....in. | 4½ | 4½ | Two 3½ | Two 4 | Two 4 | Two 4½ | Three 4 | Three 4 |
| Height of Water Line.....in. | 87 | 87 | 90 | 90 | 96 | 96 | 97 | 97 |
| Height Floor to Top of Shell.....in. | 101 | 101 | 107 | 107 | 113 | 113 | 115 | 115 |
| Distance Required to open Rear Flue Doors.....in. | 30 | 30 | 35 | 35 | 37 | 37 | 42 | 42 |
| Capacity, Steam.....sq. ft. | 7500 | 8500 | 10000 | 12000 | 14000 | 16000 | 18000 | 20000 |
| Capacity, Water.....sq. ft. | 12400 | 14000 | 16500 | 19800 | 23100 | 26400 | 29700 | 33000 |
| Approximate Weight, pounds..... | 16900 | 17800 | 20900 | 22900 | 25000 | 26500 | 28800 | 30000 |

Measuring All Demands on a Boiler

In estimating the size of the Boiler required, the square feet of surface on all mains and risers used on the job should be considered in connection with the radiators to be installed. This additional surface should be carefully figured out and considered with reference to the amount of steam it condenses, or its cooling effect on water.

If radiation other than the direct form is used, the Boiler capacity must be increased in proportion as those surfaces may condense steam or cool the water more rapidly than direct radiation.

Let us illustrate the demands made on a large steam boiler where a considerable area on the piping makes it more impressive—although the proportion of piping to the total amount of radiator surface may be the same as in a small cottage job. For instance, take a suppositional case calling for one of our IDEAL 48-inch Steam Boilers. Their capacities are rated on the basis of 2 pounds gauge pressure (219 degrees Fahrenheit) at the Boiler and 1 pound of steam condensed per hour to each 4 feet of condensing surface standing in air at 70 degrees. IDEAL 48-inch Water Boilers are rated with water at a temperature of 180 degrees Fahrenheit leaving the Boiler, and radiation standing in air at 70 degrees. Like all heating Boilers their ratings are figured in terms of direct radiation.

As SIRDAR and IDEAL Steam Boilers are rated on so definite a standard it only requires a knowledge of how many pounds of steam will be required per hour to accurately select a Boiler which cannot fail to produce the heating surface

required with proper conditions of fuel and draft. For example: Suppose a steam-heating job which might present the following demands:

| | Radiation and Piping at Surface Measurements | Steam required Per Hour for Condensation |
|---|--|--|
| Direct radiation standing in air at 70 degrees..... | 2,600 sq. ft. | 650 lbs. |
| Indirect radiation..... | 1,300 " | *520 " |
| Mains, branches and risers (not covered) standing in air at, say 60 degrees..... | 800 " | †240 " |
| Total amount of radiating surface..... | 4,700 " | |
| Total amount of steam re- quired per hour..... | | 1,410 " |
| As 4 square feet of direct radiating surface will con- dense one pound of steam per hour, we multiply by..... | | 4 |
| This would make the capac- ity of the Boiler required in terms of direct radi- ation..... | | 5,640 sq. ft. |

It is therefore clearly seen that while there is a total of 4,700 square feet of surface exposed to the air at varying degrees of temperature, yet be- cause of the increased steam-condensing effects to which portions of the surfaces are subjected, the demand for steam is so increased that for the example cited a Boiler having a capacity for 5,640 square feet of direct radiation would be required. This illustrates the advantage of knowing the total surface the job presents in radiation and piping, and just how much steam is required to do the work. Then the selection is lifted from all hazard or guesswork.

*The rate of condensation depends on temperature of air entering the stack, area velocity, etc.
†The rate of condensation from these surfaces would be much diminished by a good pipe covering, depending upon the character of the material used.

Peerless Two-Column Plain Radiators

Manufactured at Brantford Plant

For Steam and Water



Each section is $7\frac{3}{8}$ inches wide. Width of legs, $8\frac{1}{2}$ inches.
For other measurements, etc., see pages 143, 144, 145.
See page 119 for List Prices.

Peerless Two-Column Plain Radiators

For Steam and Water

| No. of Sec- tions | * Length 2½ in. per Sec. | HEATING SURFACE—SQUARE FEET | | | | | |
|----------------------------|-----------------------------------|---|---|---|---|---|---|
| | | 45-in. Height 5 sq. ft. per Sec. | 38-in. Height 4 sq. ft. per Sec. | 32-in. Height 3 ⅓ sq. ft. per Sec. | 26-in. Height 2 ⅔ sq. ft. per Sec. | 23-in. Height 2 ⅓ sq. ft. per Sec. | 20-in. Height 2 sq. ft. per Sec. |
| 2 | 5 | 10 | 8 | 6 ⅔ | 5 ⅓ | 4 ⅔ | 4 |
| 3 | 7 ½ | 15 | 12 | 10 | 8 | 7 | 6 |
| 4 | 10 | 20 | 16 | 13 ⅓ | 10 ⅔ | 9 ⅓ | 8 |
| 5 | 12 ½ | 25 | 20 | 16 ⅔ | 13 ⅓ | 11 ⅔ | 10 |
| 6 | 15 | 30 | 24 | 20 | 16 | 14 | 12 |
| 7 | 17 ½ | 35 | 28 | 23 ⅓ | 18 ⅔ | 16 ⅓ | 14 |
| 8 | 20 | 40 | 32 | 26 ⅔ | 21 ⅓ | 18 ⅔ | 16 |
| 9 | 22 ½ | 45 | 36 | 30 | 24 | 21 | 18 |
| 10 | 25 | 50 | 40 | 33 ⅓ | 23 ⅔ | 23 ⅓ | 20 |
| 11 | 27 ½ | 55 | 44 | 36 ⅔ | 29 ⅓ | 25 ⅔ | 22 |
| 12 | 30 | 60 | 48 | 40 | 32 | 28 | 24 |
| 13 | 32 ½ | 65 | 52 | 43 ⅓ | 34 ⅔ | 30 ⅓ | 26 |
| 14 | 35 | 70 | 56 | 46 ⅔ | 37 ⅓ | 32 ⅔ | 28 |
| 15 | 37 ½ | 75 | 60 | 50 | 40 | 35 | 30 |
| 16 | 40 | 80 | 64 | 53 ⅓ | 42 ⅔ | 37 ⅓ | 32 |
| 17 | 42 ½ | 85 | 68 | 56 ⅔ | 45 ⅓ | 39 ⅔ | 34 |
| 18 | 45 | 90 | 72 | 60 | 48 | 42 | 36 |
| 19 | 47 ½ | 95 | 76 | 63 ⅓ | 50 ⅔ | 44 ⅓ | 38 |
| 20 | 50 | 100 | 80 | 66 ⅔ | 53 ⅓ | 46 ⅔ | 40 |
| 21 | 52 ½ | 105 | 84 | 70 | 56 | 49 | 42 |
| 22 | 55 | 110 | 88 | 73 ⅓ | 58 ⅔ | 51 ⅓ | 44 |
| 23 | 57 ½ | 115 | 92 | 76 ⅔ | 61 ⅓ | 53 ⅔ | 46 |
| 24 | 60 | 120 | 96 | 80 | 64 | 56 | 48 |
| 25 | 62 ½ | 125 | 100 | 83 ⅓ | 66 ⅔ | 58 ⅓ | 50 |

Above Radiators are tapped 2 inches and bushed as per list on page 143.

Orders for Water Radiation should state whether tapplings are desired for single or twin connection. Twin connections are tapped left-hand. Single, or opposite end connections are tapped right-hand unless otherwise ordered.

For distance from floor to centre of tapping and other measurements, see pages 144 and 145.

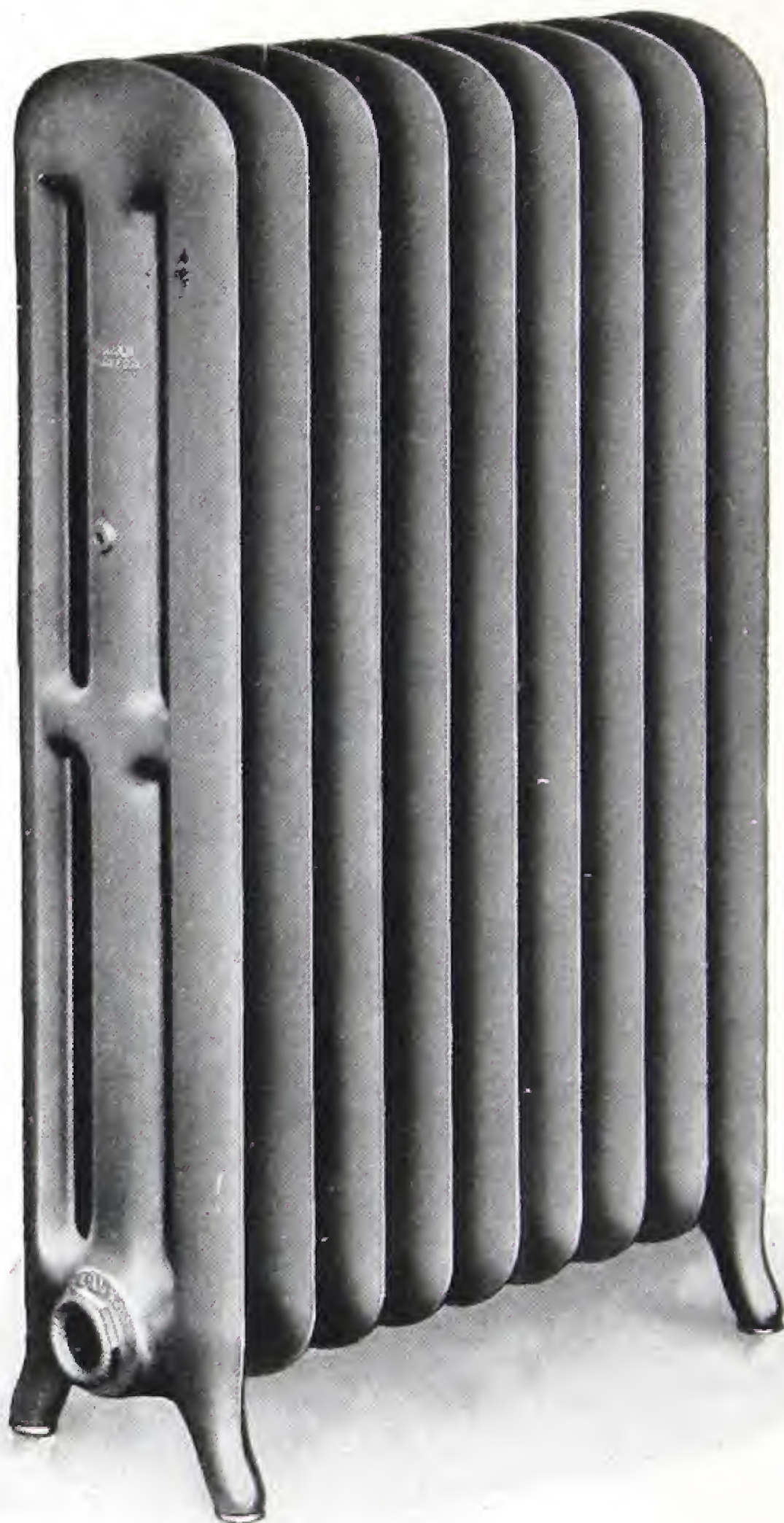
Connected at top and bottom with extra-heavy right and left threaded nipples.

*In estimating length of Radiator, allow ⅝-inch for each bushing.

Peerless Three-Column Plain Radiators

Manufactured at Brantford Plant

For Steam and Water



Each section is 9 inches wide. Width of legs, 10 inches.
For other measurements, see pages 143, 144, and 145.

See page 119 for List Prices.

Peerless Three-Column Plain Radiators

For Steam and Water

| No. of Sections | * Length 2½ in. per Sec. | HEATING SURFACE—SQUARE FEET | | | | | |
|-----------------|-----------------------------------|---|---|--|--|---|--|
| | | 45 in. Height 6 sq. ft. per Sec. | 38-in. Height 5 sq. ft. per Sec. | 32-in. Height 4½ sq. ft. per Sec. | 26-in. Height 3¾ sq. ft. per Sec. | 22-in. Height 3 sq. ft. per Sec. | 18-in. Height 2¼ sq. ft. per Sec. |
| 2 | 5 | 12 | 10 | 9 | 7½ | 6 | 4½ |
| 3 | 7½ | 18 | 15 | 13½ | 11¼ | 9 | 6¾ |
| 4 | 10 | 24 | 20 | 18 | 15 | 12 | 9 |
| 5 | 12½ | 30 | 25 | 22½ | 18¾ | 15 | 11¼ |
| 6 | 15 | 36 | 30 | 27 | 22½ | 18 | 13½ |
| 7 | 17½ | 42 | 35 | 31½ | 26¼ | 21 | 15¾ |
| 8 | 20 | 48 | 40 | 36 | 30 | 24 | 18 |
| 9 | 22½ | 54 | 45 | 40½ | 33¾ | 27 | 20¼ |
| 10 | 25 | 60 | 50 | 45 | 37½ | 30 | 22½ |
| 11 | 27½ | 66 | 55 | 49½ | 41¼ | 33 | 24¾ |
| 12 | 30 | 72 | 60 | 54 | 45 | 36 | 27 |
| 13 | 32½ | 78 | 65 | 58½ | 48¾ | 39 | 29¼ |
| 14 | 35 | 84 | 70 | 63 | 52½ | 42 | 31½ |
| 15 | 37½ | 90 | 75 | 67½ | 56¼ | 45 | 33¾ |
| 16 | 40 | 96 | 80 | 72 | 60 | 48 | 36 |
| 17 | 42½ | 102 | 85 | 76½ | 63¾ | 51 | 38¼ |
| 18 | 45 | 108 | 90 | 81 | 67½ | 54 | 40½ |
| 19 | 47½ | 114 | 95 | 85½ | 71¼ | 57 | 42¾ |
| 20 | 50 | 120 | 100 | 90 | 75 | 60 | 45 |
| 21 | 52½ | 126 | 105 | 94½ | 78¾ | 63 | 47¼ |
| 22 | 55 | 132 | 110 | 99 | 82½ | 66 | 49½ |
| 23 | 57½ | 138 | 115 | 103½ | 86¼ | 69 | 51¾ |
| 24 | 60 | 144 | 120 | 108 | 90 | 72 | 54 |
| 25 | 62½ | 150 | 125 | 112½ | 93¾ | 75 | 56¼ |

Above Radiators are tapped 2 inches and bushed as per list on page 143.

Orders for Water Radiation should state whether tappings are desired for single or twin connection. Twin connections are tapped left-hand. Single, or opposite end connections are tapped right-hand unless otherwise ordered.

For distance from floor to centre of tapping and other measurements, see pages 144 and 145.

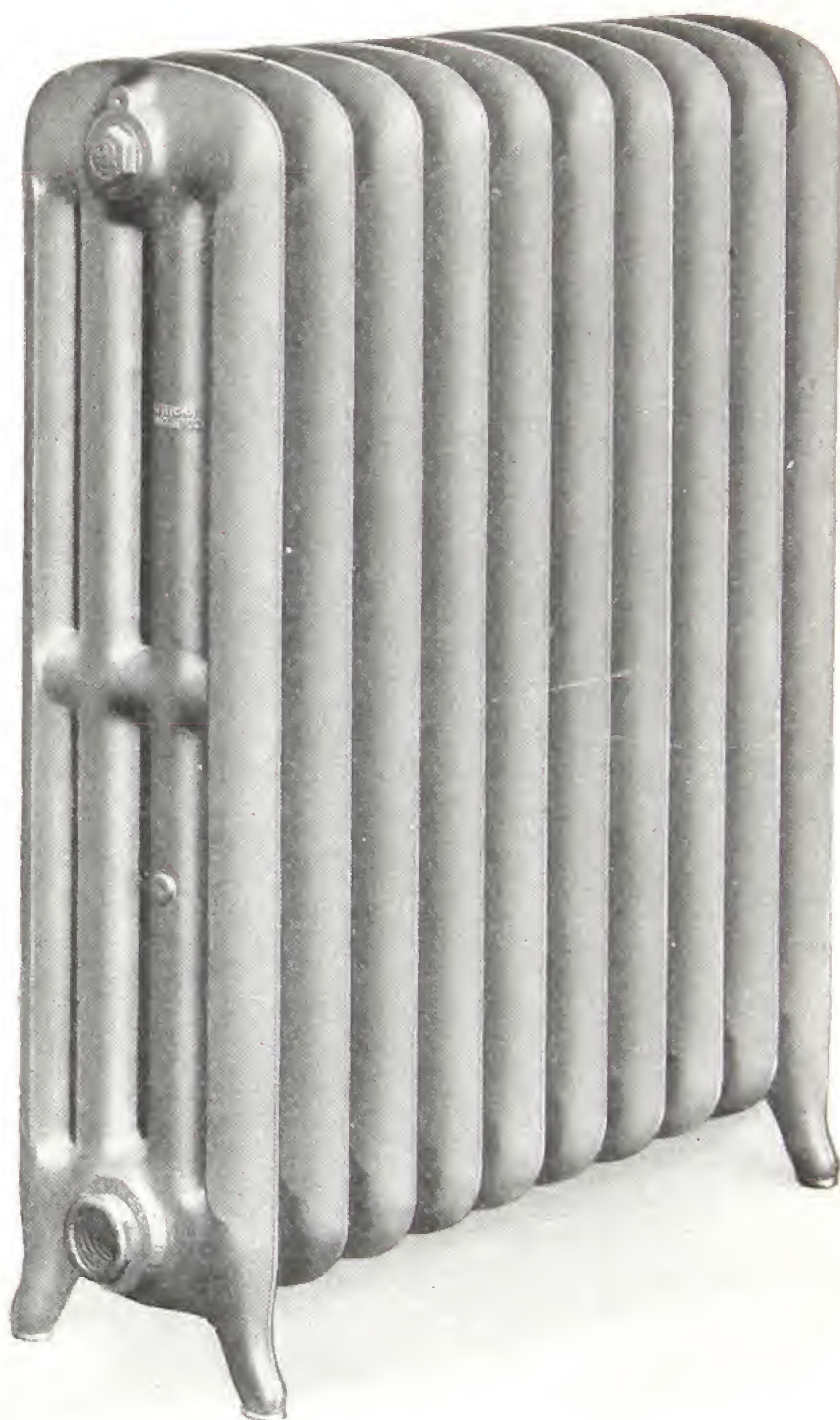
Connected with extra-heavy right and left threaded nipples.

*In estimating length of Radiator, allow 5⁄8-inch for each bushing.

Peerless Four-Column Plain Radiators

Manufactured at Brantford Plant

For Steam and Water



Each section is $10\frac{1}{2}$ inches wide. Width of legs, $11\frac{1}{4}$ inches
For other measurements, see pages 143, 144 and 145.

See page 119 for List Prices.

Peerless Four-Column Plain Radiators

For Steam or Water

| No: of Sec- tions | Length 3 in. per Sec. | HEATING SURFACE—SQUARE FEET | | | | | |
|----------------------------|-----------------------------|--|---|---|---|---|---|
| | | 45-in. Height 10 sq. ft. per Sec. | 38-in. Height 8 sq. ft. per Sec. | 32-in. Height 6 ½ sq. ft. per Sec. | 26-in. Height 5 sq. ft. per Sec. | 22-in. Height 4 sq. ft. per Sec. | 18-in. Height 3 sq. ft. per Sec. |
| 2 | 6 | 20 | 16 | 13 | 10 | 8 | 6 |
| 3 | 9 | 30 | 24 | 19 ½ | 15 | 12 | 9 |
| 4 | 12 | 40 | 32 | 26 | 20 | 16 | 12 |
| 5 | 15 | 50 | 40 | 32 ½ | 25 | 20 | 15 |
| 6 | 18 | 60 | 48 | 39 | 30 | 24 | 18 |
| 7 | 21 | 70 | 56 | 45 ½ | 35 | 28 | 21 |
| 8 | 24 | 80 | 64 | 52 | 40 | 32 | 24 |
| 9 | 27 | 90 | 72 | 58 ½ | 45 | 36 | 27 |
| 10 | 30 | 100 | 80 | 65 | 50 | 40 | 30 |
| 11 | 33 | 110 | 88 | 71 ½ | 55 | 44 | 33 |
| 12 | 36 | 120 | 96 | 78 | 60 | 48 | 36 |
| 13 | 39 | 130 | 104 | 84 ½ | 65 | 52 | 39 |
| 14 | 42 | 140 | 112 | 91 | 70 | 56 | 42 |
| 15 | 45 | 150 | 120 | 97 ½ | 75 | 60 | 45 |
| 16 | 48 | 160 | 128 | 104 | 80 | 64 | 48 |
| 17 | 51 | 170 | 136 | 110 ½ | 85 | 68 | 51 |
| 18 | 54 | 180 | 144 | 117 | 90 | 72 | 54 |
| 19 | 57 | 190 | 152 | 123 ½ | 95 | 76 | 57 |
| 20 | 60 | 200 | 160 | 130 | 100 | 80 | 60 |
| 21 | 63 | 210 | 168 | 136 ½ | 105 | 84 | 63 |
| 22 | 66 | 220 | 176 | 143 | 110 | 88 | 66 |
| 23 | 69 | 230 | 184 | 149 ½ | 115 | 92 | 69 |
| 24 | 72 | 240 | 192 | 156 | 120 | 96 | 72 |
| 25 | 75 | 250 | 200 | 162 ½ | 125 | 100 | 75 |

Above Radiators are tapped 2 inches and bushed as per list on page 143.

Orders for Water Radiators should state whether tappings are desired for single or twin connection. Twin connections are tapped left-hand. Single, or opposite end connections are tapped right-hand unless otherwise ordered.

For distance from floor to centre of tapping and other measurements, see pages 144 and 145.

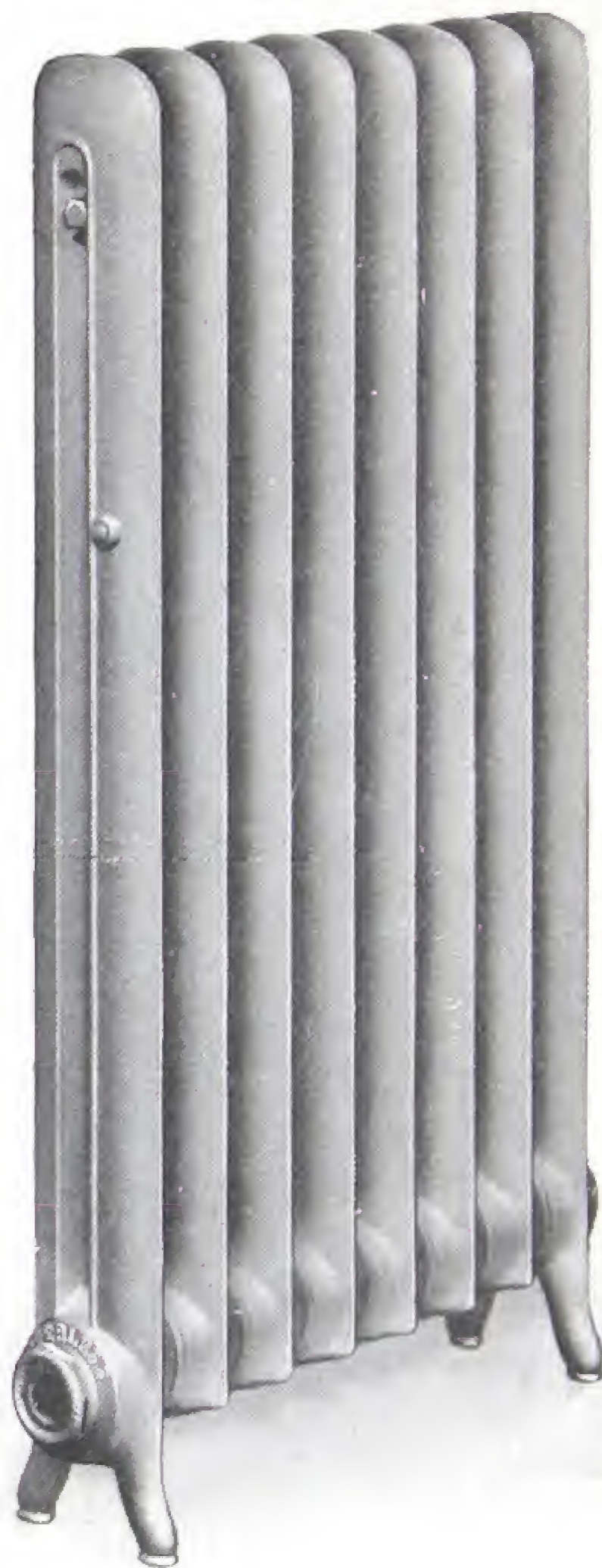
Connected at top and bottom with extra-heavy right and left threaded nipples.

*In estimating length of Radiator, allow ⅝ inch for each bushing.

Peerless One-Column Plain Radiator

Manufactured at Toronto Plant

For Steam and Water



See page 119 for List Prices.

Peerless One-Column Plain Radiators

For Steam and Water

Capacities and Dimensions

| No. of Sections | Length 2 1/2" per Section | HEATING SURFACE | | | | |
|-----------------------|------------------------------------|--------------------------------|------------------------------------|--------------------------------|------------------------------------|------------------------------------|
| | | 38" in Height | 32" in Height | 26" in Height | 23" in Height | 20" in Height |
| | | 3 Sq. Ft. per Section | 2 1/2 Sq. Ft. per Section | 2 Sq. Ft. per Section | 1 2/3 Sq. Ft. per Section | 1 1/2 Sq. Ft. per Section |
| 2 | 5 | 6 | 5 | 4 | 3 1/3 | 3 |
| 3 | 7 1/2 | 9 | 7 1/2 | 6 | 5 | 4 1/2 |
| 4 | 10 | 12 | 10 | 8 | 6 2/3 | 6 |
| 5 | 12 1/2 | 15 | 12 1/2 | 10 | 8 1/3 | 7 1/2 |
| 6 | 15 | 18 | 15 | 12 | 10 | 9 |
| 7 | 17 1/2 | 21 | 17 1/2 | 14 | 11 2/3 | 10 1/2 |
| 8 | 20 | 24 | 20 | 16 | 13 1/3 | 12 |
| 9 | 22 1/2 | 27 | 22 1/2 | 18 | 15 | 13 1/2 |
| 10 | 25 | 30 | 25 | 20 | 16 2/3 | 15 |
| 11 | 27 1/2 | 33 | 27 1/2 | 22 | 18 1/3 | 16 1/2 |
| 12 | 30 | 36 | 30 | 24 | 20 | 18 |
| 13 | 32 1/2 | 39 | 32 1/2 | 26 | 21 2/3 | 19 1/2 |
| 14 | 35 | 42 | 35 | 28 | 23 1/3 | 21 |
| 15 | 37 1/2 | 45 | 37 1/2 | 30 | 25 | 22 1/2 |
| 16 | 40 | 48 | 40 | 32 | 26 2/3 | 24 |
| 17 | 42 1/2 | 51 | 42 1/2 | 34 | 28 1/3 | 25 1/2 |
| 18 | 45 | 54 | 45 | 36 | 30 | 27 |
| 19 | 47 1/2 | 57 | 47 1/2 | 38 | 31 2/3 | 28 1/2 |
| 20 | 50 | 60 | 50 | 40 | 33 1/3 | 30 |
| 21 | 52 1/2 | 63 | 52 1/2 | 42 | 35 | 31 1/2 |
| 22 | 55 | 66 | 55 | 44 | 36 2/3 | 33 |
| 23 | 57 1/2 | 69 | 57 1/2 | 46 | 38 1/3 | 34 1/2 |
| 24 | 60 | 72 | 60 | 48 | 40 | 36 |
| 25 | 62 1/2 | 75 | 62 1/2 | 50 | 41 2/3 | 37 1/2 |

*In estimating length of radiator allow 5/8 inch for each plug or bushing.

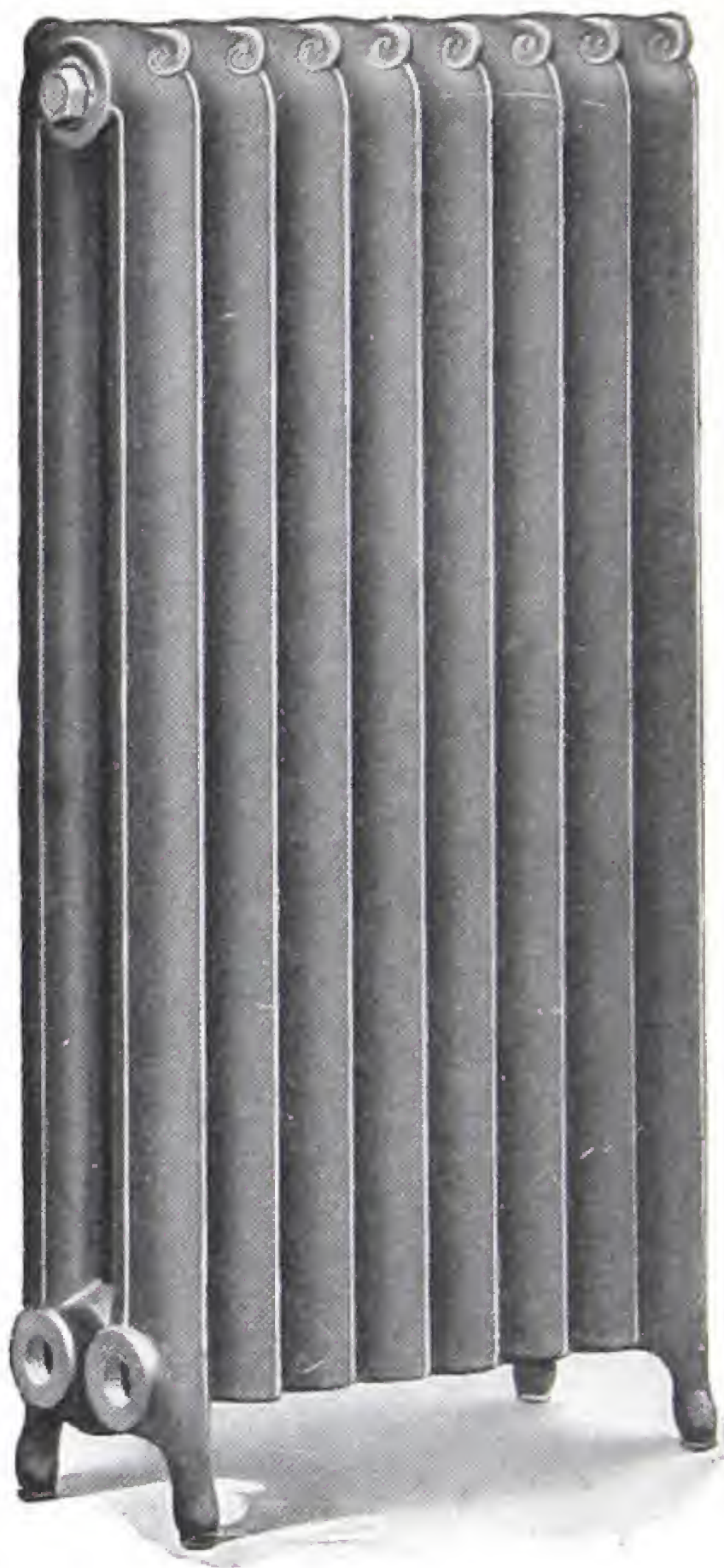
Width of section 4 1/2 inches, width of legs, 5 1/4 inches. Additional measurements, etc., on pages 144, 145. Made in single connection only.

Tapped and bushed as per schedules on page 143, unless otherwise ordered.

Regina Two-Column Plain Radiator

Manufactured at Toronto Plant

For Steam and Water



See page 93.

See page 119 for List Prices.

Regina Two-Column Plain Radiators

For Steam and Water

Capacities and Dimensions

| No. of Section | * Length 2½ in. per Section | HEATING SURFACE | | | | | | |
|----------------------|---|---------------------------------|---------------------------------|-----------------------------------|---------------------------------|-----------------------------------|-----------------------------------|---------------------------------|
| | | 45" in Height | 38" in Height | 32" in Height | 30" in Height | 26" in Height | 23" in Height | 20" in Height |
| | | 5 Sq. Ft. per Sec'tion | 4 Sq. Ft. per Sec'tion | 3 ⅓ Sq. Ft. per Sec'tion | 3 Sq. Ft. per Sec'tion | 2 ⅔ Sq. Ft. per Sec'tion | 2 ⅓ Sq. Ft. per Sec'tion | 2 Sq. Ft. per Sec'tion |
| 2 | 5 | 10 | 8 | 6 ⅔ | 6 | 5 ⅓ | 4 ⅔ | 4 |
| 3 | 7 ½ | 15 | 12 | 10 | 9 | 8 | 7 | 6 |
| 4 | 10 | 20 | 16 | 13 ⅓ | 12 | 10 ⅔ | 9 ⅓ | 8 |
| 5 | 12 ½ | 25 | 20 | 16 ⅔ | 15 | 13 ⅓ | 11 ⅔ | 10 |
| 6 | 15 | 30 | 24 | 20 | 18 | 16 | 14 | 12 |
| 7 | 17 ½ | 35 | 28 | 23 ⅓ | 21 | 18 ⅔ | 16 ⅓ | 14 |
| 8 | 20 | 40 | 32 | 26 ⅔ | 24 | 21 ⅓ | 18 ⅔ | 16 |
| 9 | 22 ½ | 45 | 36 | 30 | 27 | 24 | 21 | 18 |
| 10 | 25 | 50 | 40 | 33 ⅓ | 30 | 26 ⅔ | 23 ⅓ | 20 |
| 11 | 27 ½ | 55 | 44 | 36 ⅔ | 33 | 29 ⅓ | 25 ⅔ | 22 |
| 12 | 30 | 60 | 48 | 40 | 36 | 32 | 28 | 24 |
| 13 | 32 ½ | 65 | 52 | 43 ⅓ | 39 | 34 ⅔ | 30 ⅓ | 26 |
| 14 | 35 | 70 | 56 | 46 ⅔ | 42 | 37 ⅓ | 32 ⅔ | 28 |
| 15 | 37 ½ | 75 | 60 | 50 | 45 | 40 | 35 | 30 |
| 16 | 40 | 80 | 64 | 53 ⅓ | 48 | 42 ⅔ | 37 ⅓ | 32 |
| 17 | 42 ½ | 85 | 68 | 56 ⅔ | 51 | 45 ⅓ | 39 ⅔ | 34 |
| 18 | 45 | 90 | 72 | 60 | 54 | 48 | 42 | 36 |
| 19 | 47 ½ | 95 | 76 | 63 ⅓ | 57 | 50 ⅔ | 44 ⅓ | 38 |
| 20 | 50 | 100 | 80 | 66 ⅔ | 60 | 53 ⅓ | 46 ⅔ | 40 |
| 21 | 52 ½ | 105 | 84 | 70 | 63 | 56 | 49 | 42 |
| 22 | 55 | 110 | 88 | 73 ⅓ | 66 | 58 ⅔ | 51 ⅓ | 44 |
| 23 | 57 ½ | 115 | 92 | 76 ⅔ | 69 | 61 ⅓ | 53 ⅔ | 46 |
| 24 | 60 | 120 | 96 | 80 | 72 | 64 | 56 | 48 |
| 25 | 62 ½ | 125 | 100 | 83 ⅓ | 75 | 66 ⅔ | 58 ⅓ | 50 |

*In estimating length of radiator allow ⅝-inch for each plug or bushing.

Width of section 7⅜ inches, width of legs, 8¼ inches. Additional measurements on pages 150 and 151. Made in twin and single connections.

Tapped and bushed as per schedules on page 143, unless otherwise ordered.

Regina Three-Column Plain Radiator

Manufactured at Toronto Plant

For Steam and Water



See page 95.

See page 119 for List Prices.

Regina Three-Column Plain Radiators

For Steam and Water

Capacities and Dimensions

| No. of Sections | * Length 2½ in. per Section | HEATING SURFACE | | | | | |
|-----------------|--------------------------------------|--------------------------------|--------------------------------|---------------------------------|---------------------------------|--------------------------------|---------------------------------|
| | | 44" in Height | 38" in Height | 32" in Height | 26" in Height | 22" in Height | 18" in Height |
| | | 6 Sq. Ft. per Section | 5 Sq. Ft. per Section | 4½ Sq. Ft. per Section | 3¾ Sq. Ft. per Section | 3 Sq. Ft. per Section | 2¼ Sq. Ft. per Section |
| 2 | 5 | 12 | 10 | 9 | 7½ | 6 | 4½ |
| 3 | 7½ | 18 | 15 | 13½ | 11¼ | 9 | 6¾ |
| 4 | 10 | 24 | 20 | 18 | 15 | 12 | 9 |
| 5 | 12½ | 30 | 25 | 22½ | 18¾ | 15 | 11¼ |
| 6 | 15 | 36 | 30 | 27 | 22½ | 18 | 13½ |
| 7 | 17½ | 42 | 35 | 31½ | 26¼ | 21 | 15¾ |
| 8 | 20 | 48 | 40 | 36 | 30 | 24 | 18 |
| 9 | 22½ | 54 | 45 | 40½ | 33¾ | 27 | 20¼ |
| 10 | 25 | 60 | 50 | 45 | 37½ | 30 | 22½ |
| 11 | 27½ | 66 | 55 | 49½ | 41¼ | 33 | 24¾ |
| 12 | 30 | 72 | 60 | 54 | 45 | 36 | 27 |
| 13 | 32½ | 78 | 65 | 58½ | 48¾ | 39 | 29¼ |
| 14 | 35 | 84 | 70 | 63 | 52½ | 42 | 31½ |
| 15 | 37½ | 90 | 75 | 67½ | 56¼ | 45 | 33¾ |
| 16 | 40 | 96 | 80 | 72 | 60 | 48 | 36 |
| 17 | 42½ | 102 | 85 | 76½ | 63¾ | 51 | 38¼ |
| 18 | 45 | 108 | 90 | 81 | 67½ | 54 | 40½ |
| 19 | 47½ | 114 | 95 | 85½ | 71¼ | 57 | 42¾ |
| 20 | 50 | 120 | 100 | 90 | 75 | 60 | 45 |
| 21 | 52½ | 126 | 105 | 94½ | 78¾ | 63 | 47¼ |
| 22 | 55 | 132 | 110 | 99 | 82½ | 66 | 49½ |
| 23 | 57½ | 138 | 115 | 103½ | 86¼ | 69 | 51¾ |
| 24 | 60 | 144 | 120 | 108 | 90 | 72 | 54 |
| 25 | 62½ | 150 | 125 | 112½ | 93¾ | 75 | 56¼ |

*In estimating length of radiator allow ⅝ inch for each plug or bushing.

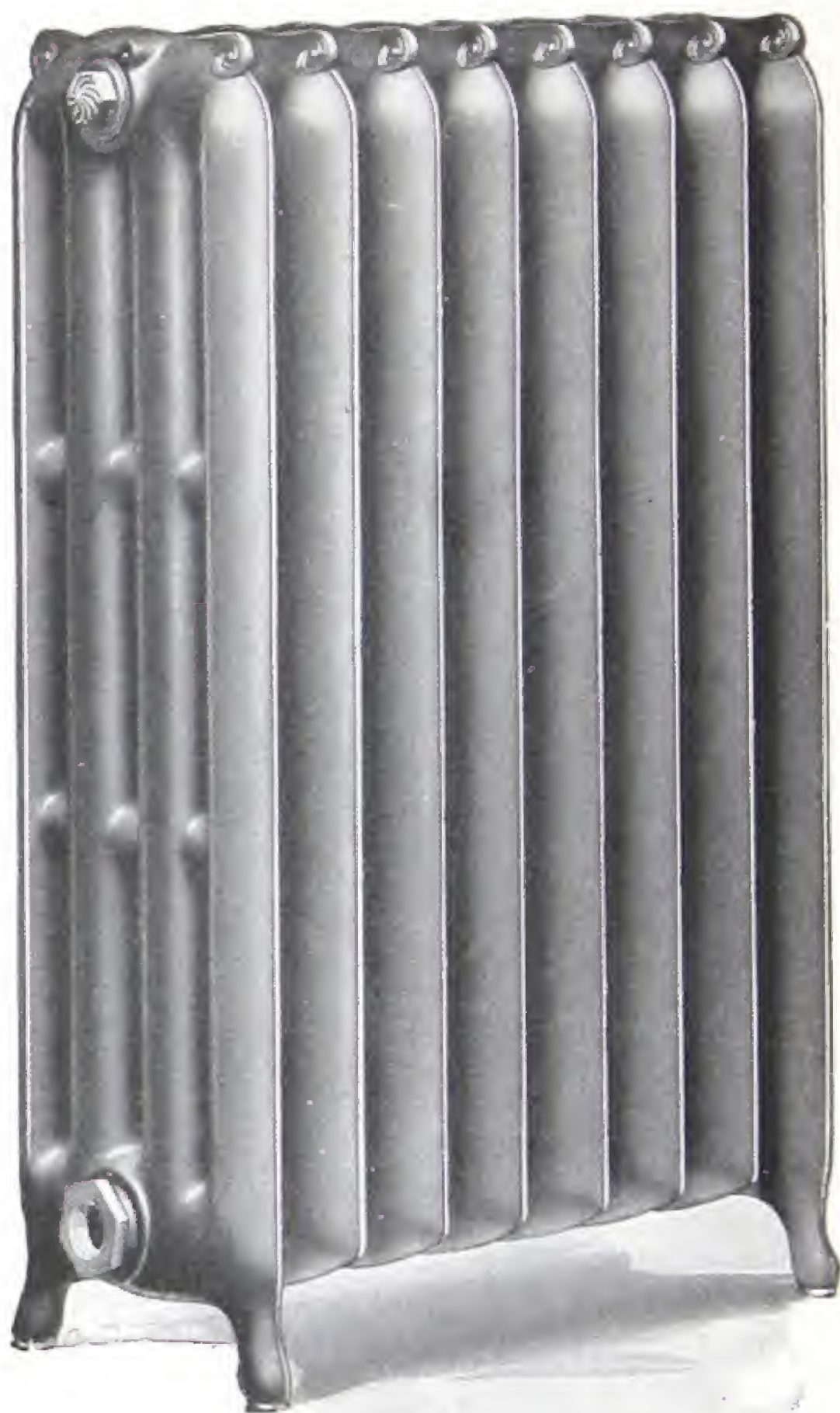
Width of section 9 inches, width of legs, 9¼ inches. Additional measurements on pages 150 and 151. Made in twin and single connections.

Tapped and bushed as per schedules on page 143, unless otherwise ordered.

Regina Four-Column Plain Radiator

Manufactured at Toronto Plant

For Steam and Water



See page 97.

See page 119 for List Prices.

Regina Four-Column Plain Radiators

For Steam or Water

Capacities and Dimensions

| No. of Sections | * Length 3 in. per Section | HEATING SURFACE | | | | | | |
|-----------------------|--|--------------------------------------|-------------------------------------|--------------------------------------|-------------------------------------|-------------------------------------|--------------------------------------|-------------------------------------|
| | | 45" in Height | 38" in Height | 32" in Height | 26" in Height | 22" in Height | 20" in Height | 18" in Height |
| | | 10 Sq. Ft. per Sec- tion | 8 Sq. Ft. per Sec- tion | 6½ Sq. Ft. per Sec- tion | 5 Sq. Ft. per Sec- tion | 4 Sq. Ft. per Sec- tion | 3½ Sq. Ft. per Sec- tion | 3 Sq. Ft. per Sec- tion |
| 2 | 6 | 20 | 16 | 13 | 10 | 8 | 7 | 6 |
| 3 | 9 | 30 | 24 | 19½ | 15 | 12 | 10½ | 9 |
| 4 | 12 | 40 | 32 | 26 | 20 | 16 | 14 | 12 |
| 5 | 15 | 50 | 40 | 32½ | 25 | 20 | 17½ | 15 |
| 6 | 18 | 60 | 48 | 39 | 30 | 24 | 21 | 18 |
| 7 | 21 | 70 | 56 | 45½ | 35 | 28 | 24½ | 21 |
| 8 | 24 | 80 | 64 | 52 | 40 | 32 | 28 | 24 |
| 9 | 27 | 90 | 72 | 58½ | 45 | 36 | 31½ | 27 |
| 10 | 30 | 100 | 80 | 65 | 50 | 40 | 35 | 30 |
| 11 | 33 | 110 | 88 | 71½ | 55 | 44 | 38½ | 33 |
| 12 | 36 | 120 | 96 | 78 | 60 | 48 | 42 | 36 |
| 13 | 39 | 130 | 104 | 84½ | 65 | 52 | 45½ | 39 |
| 14 | 42 | 140 | 112 | 91 | 70 | 56 | 49 | 42 |
| 15 | 45 | 150 | 120 | 97½ | 75 | 60 | 52½ | 45 |
| 16 | 48 | 160 | 128 | 104 | 80 | 64 | 56 | 48 |
| 17 | 51 | 170 | 136 | 110½ | 85 | 68 | 59½ | 51 |
| 18 | 54 | 180 | 144 | 117 | 90 | 72 | 63 | 54 |
| 19 | 57 | 190 | 152 | 123½ | 95 | 76 | 66½ | 57 |
| 20 | 60 | 200 | 160 | 130 | 100 | 80 | 70 | 60 |
| 21 | 63 | 210 | 168 | 136½ | 105 | 84 | 73½ | 63 |
| 22 | 66 | 220 | 176 | 143 | 110 | 88 | 77 | 66 |
| 23 | 69 | 230 | 184 | 149½ | 115 | 92 | 80½ | 69 |
| 24 | 72 | 240 | 192 | 156 | 120 | 96 | 84 | 72 |
| 25 | 75 | 250 | 200 | 162½ | 125 | 100 | 87½ | 75 |

*In estimating length of radiator allow ⅝ inch for each plug or bushing.

Width of section 3 inches, width of legs, 11¾ inches. Additional measurements on pages 150 and 151.

Made in twin and single connections. Tapped and bushed as per schedules on page 143, unless otherwise ordered.

Regina One-Column Plain Radiator

Manufactured at Toronto Plant
For Steam and Water



See page 99.

See page 119 for List Prices.

Regina One-Column Plain Radiators

For Steam and Water

Capacities and Dimensions

| No. of Sections | Length 2½" per Section | HEATING SURFACE | | | | |
|-----------------------|---------------------------------|--------------------------------|---------------------------------|--------------------------------|---------------------------------|---------------------------------|
| | | 38" in Height | 32" in Height | 26" in Height | 23" in Height | 20" in Height |
| | | 3 Sq. Ft. per Section | 2½ Sq. Ft. per Section | 2 Sq. Ft. per Section | 1⅔ Sq. Ft. per Section | 1½ Sq. Ft. per Section |
| 2 | 5 | 6 | 5 | 4 | 3⅓ | 3 |
| 3 | 7½ | 9 | 7½ | 6 | 5 | 4½ |
| 4 | 10 | 12 | 10 | 8 | 6⅔ | 6 |
| 5 | 12½ | 15 | 12½ | 10 | 8⅓ | 7½ |
| 6 | 15 | 18 | 15 | 12 | 10 | 9 |
| 7 | 17½ | 21 | 17½ | 14 | 11⅔ | 10½ |
| 8 | 20 | 24 | 20 | 16 | 13⅓ | 12 |
| 9 | 22½ | 27 | 22½ | 18 | 15 | 13½ |
| 10 | 25 | 30 | 25 | 20 | 16⅔ | 15 |
| 11 | 27½ | 33 | 27½ | 22 | 18⅓ | 16½ |
| 12 | 30 | 36 | 30 | 24 | 20 | 18 |
| 13 | 32½ | 39 | 32½ | 26 | 21⅔ | 19½ |
| 14 | 35 | 42 | 35 | 28 | 23⅓ | 21 |
| 15 | 37½ | 45 | 37½ | 30 | 25 | 22½ |
| 16 | 40 | 48 | 40 | 32 | 26⅔ | 24 |
| 17 | 42½ | 51 | 42½ | 34 | 28⅓ | 25½ |
| 18 | 45 | 54 | 45 | 36 | 30 | 27 |
| 19 | 47½ | 57 | 47½ | 38 | 31⅔ | 28½ |
| 20 | 50 | 60 | 50 | 40 | 33⅓ | 30 |
| 21 | 52½ | 63 | 52½ | 42 | 35 | 31½ |
| 22 | 55 | 66 | 55 | 44 | 36⅔ | 33 |
| 23 | 57½ | 69 | 57½ | 46 | 38⅓ | 34½ |
| 24 | 60 | 72 | 60 | 48 | 40 | 36 |
| 25 | 62½ | 75 | 62½ | 50 | 41⅔ | 37½ |

*In estimating length of radiator allow ⅝ inch for each plug or bushing.

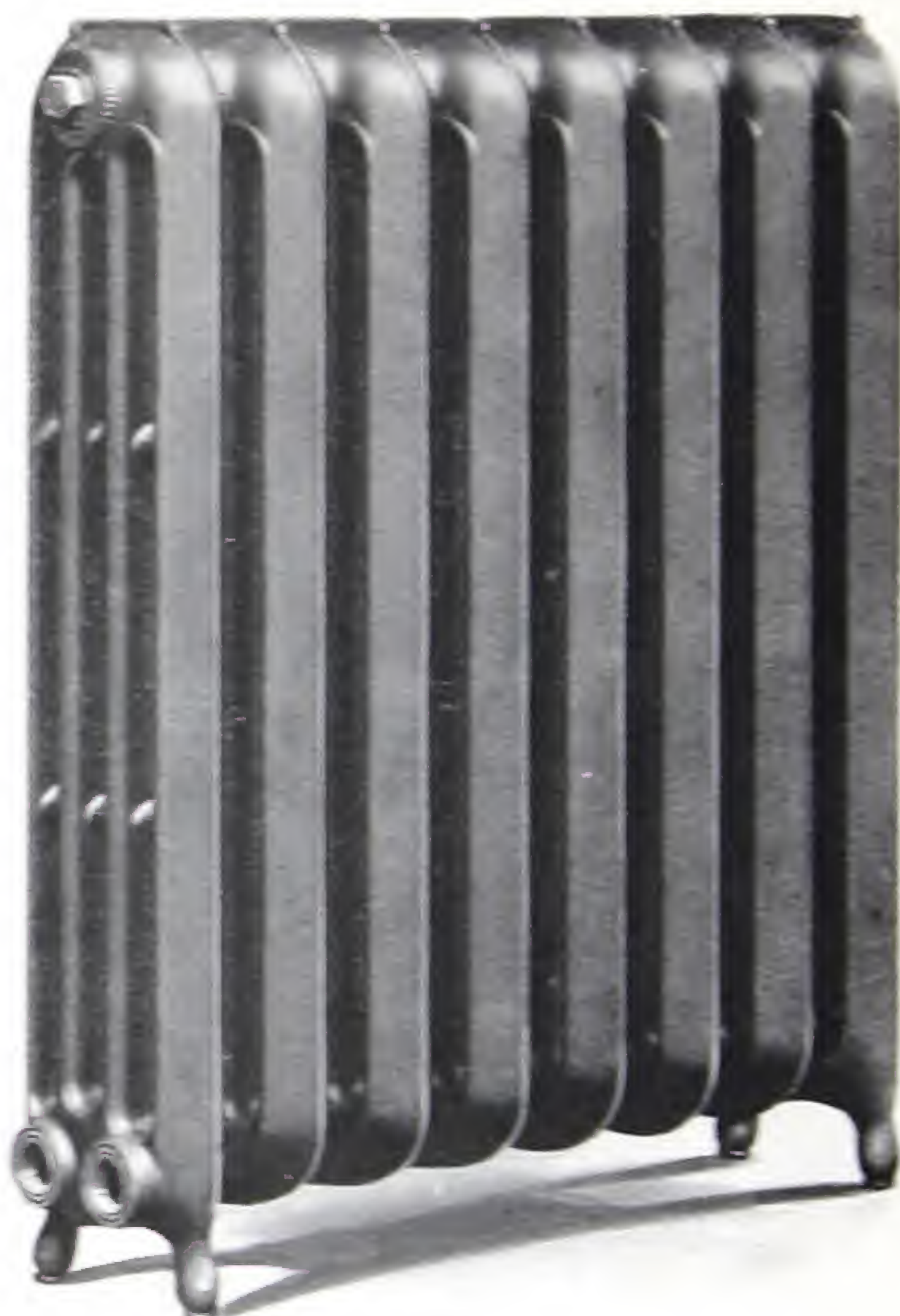
Width of section 4½ inches, width of legs, 5¼ inches. Additional measurements, etc., on pages 150, 151. Made in single connection only.

Tapped and bushed as per schedules on pages 143, unless otherwise ordered

Daisy Plain Four-Column Radiators

Manufactured at Toronto Plant

For Steam and Water



See page 101.

See page 119 for List Prices.

Daisy Four-Column Plain Radiators

For Steam or Water

| No. of Sections | * Length 4 1/8 in. per Section | HEATING SURFACE | | | | | |
|-----------------------|--|------------------------------------|--------------------------------|------------------------------------|------------------------------------|--------------------------------|------------------------------------|
| | | 42" in Height | 38" in Height | 32" in Height | 26" in Height | 20" in Height | 16" in Height |
| | | 9 2/3 Sq. Ft. per Section | 8 Sq. Ft. per Section | 6 2/3 Sq. Ft. per Section | 5 1/3 Sq. Ft. per Section | 4 Sq. Ft. per Section | 2 1/2 Sq. Ft. per Section |
| 2 | 8 1/4 | 19 1/3 | 16 | 13 1/3 | 10 2/3 | 8 | 5 |
| 3 | 12 3/8 | 29 | 24 | 20 | 16 | 12 | 7 1/2 |
| 4 | 16 1/2 | 38 2/3 | 32 | 26 2/3 | 21 1/3 | 16 | 10 |
| 5 | 20 5/8 | 48 1/3 | 40 | 33 1/3 | 26 2/3 | 20 | 12 1/2 |
| 6 | 24 3/4 | 58 | 48 | 40 | 32 | 24 | 15 |
| 7 | 28 7/8 | 67 2/3 | 56 | 46 2/3 | 37 1/3 | 28 | 17 1/2 |
| 8 | 33 | 77 1/3 | 64 | 53 1/3 | 42 2/3 | 32 | 20 |
| 9 | 37 1/8 | 87 | 72 | 60 | 48 | 36 | 22 1/2 |
| 10 | 41 1/4 | 96 2/3 | 80 | 66 2/3 | 53 1/3 | 40 | 25 |
| 11 | 45 3/8 | 106 1/3 | 88 | 73 1/3 | 58 2/3 | 44 | 27 1/2 |
| 12 | 49 1/2 | 116 | 96 | 80 | 64 | 48 | 30 |
| 13 | 53 5/8 | 125 2/3 | 104 | 86 2/3 | 69 1/3 | 52 | 32 1/2 |
| 14 | 57 3/4 | 135 1/3 | 112 | 93 1/3 | 74 2/3 | 56 | 35 |
| 15 | 61 7/8 | 145 | 120 | 100 | 80 | 60 | 37 1/2 |
| 16 | 66 | 154 2/3 | 128 | 106 2/3 | 85 1/3 | 64 | 40 |
| 17 | 70 1/8 | 164 1/3 | 136 | 113 1/3 | 90 2/3 | 68 | 42 1/2 |
| 18 | 74 1/4 | 174 | 144 | 120 | 96 | 72 | 45 |
| 19 | 78 3/8 | 183 2/3 | 152 | 126 2/3 | 101 1/3 | 76 | 47 1/2 |
| 20 | 82 1/2 | 193 1/3 | 160 | 133 1/3 | 106 2/3 | 80 | 50 |
| 21 | 86 5/8 | 203 | 168 | 140 | 112 | 84 | 52 1/2 |
| 22 | 90 3/4 | 212 2/3 | 176 | 146 2/3 | 117 1/3 | 88 | 55 |
| 23 | 94 7/8 | 222 1/3 | 184 | 153 1/3 | 122 2/3 | 92 | 57 1/2 |
| 24 | 99 | 232 | 192 | 160 | 128 | 96 | 60 |
| 25 | 103 1/8 | 241 2/3 | 200 | 166 2/3 | 133 1/3 | 100 | 62 1/2 |

*In estimating length of radiator allow 5/8 inch for each plug or bushing.

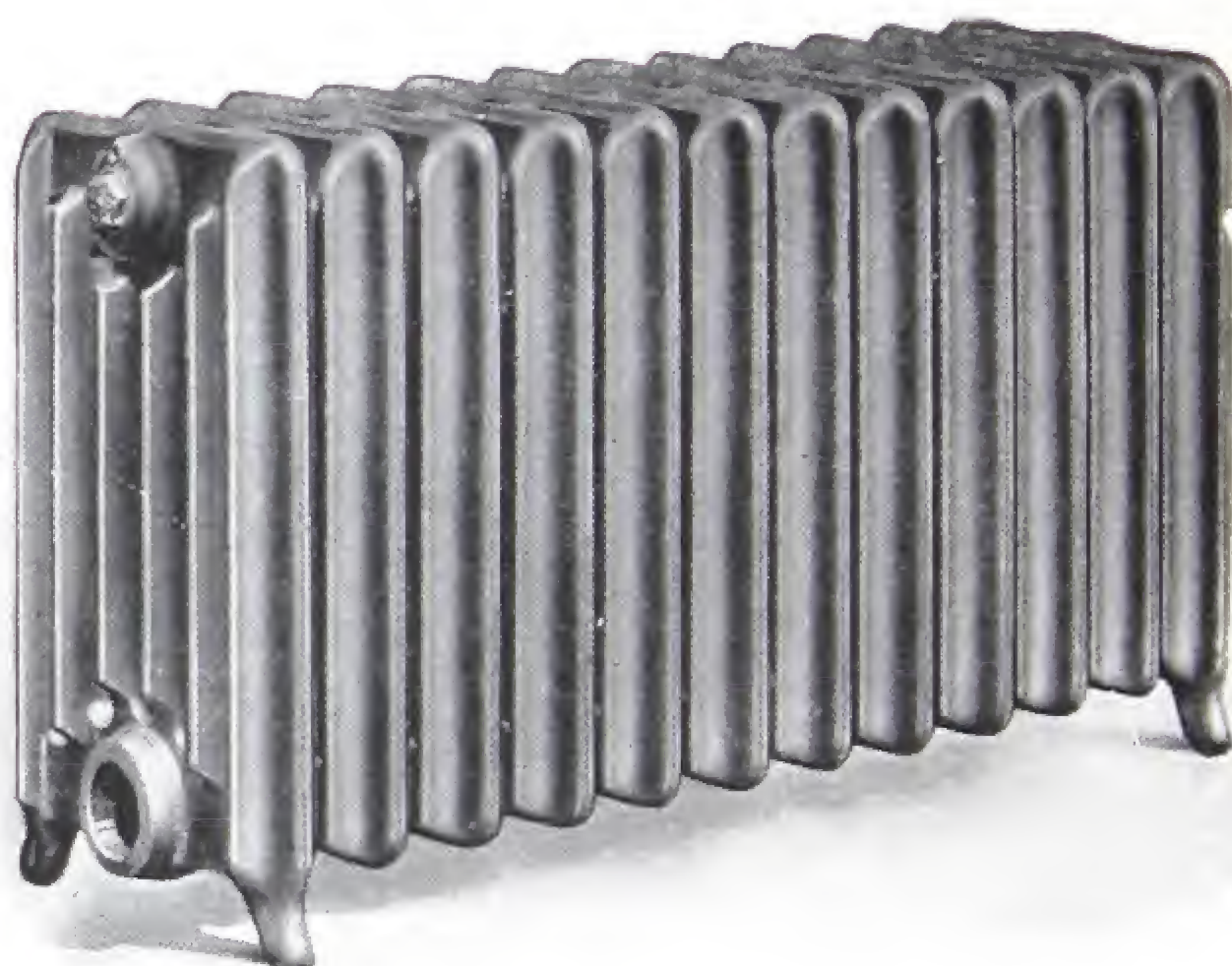
Width of section, 8 1/4 inches; width of leg, 8 1/2 inches. Additional measurements on pages 150 and 151.

Made in twin and single connections. Tapped and bushed as per schedules on page 143, unless otherwise ordered.

Peerless Plain Window Radiators

Manufactured at Brantford Plant

For Steam and Water



See page 103.

See page 119 for List Prices.

Peerless Plain Window Radiators

For Steam or Water

| No. of Sections | Length 3 in. per Section | HEATING SURFACE—SQUARE FEET | | |
|-----------------|--------------------------------|---|---|---|
| | | 20-in. Height 5 sq. ft. per Section | 16-in. Height 3 $\frac{3}{4}$ sq. ft. per Section | 13-in. Height 3 sq. ft. per Section |
| 2 | 6 | 10 | 7 $\frac{1}{2}$ | 6 |
| 3 | 9 | 15 | 11 $\frac{1}{4}$ | 9 |
| 4 | 12 | 20 | 15 | 12 |
| 5 | 15 | 25 | 18 $\frac{3}{4}$ | 15 |
| 6 | 18 | 30 | 22 $\frac{1}{2}$ | 18 |
| 7 | 21 | 35 | 26 $\frac{1}{4}$ | 21 |
| 8 | 24 | 40 | 30 | 24 |
| 9 | 27 | 45 | 33 $\frac{3}{4}$ | 27 |
| 10 | 30 | 50 | 37 $\frac{1}{2}$ | 30 |
| 11 | 33 | 55 | 41 $\frac{1}{4}$ | 33 |
| 12 | 36 | 60 | 45 | 36 |
| 13 | 39 | 65 | 48 $\frac{3}{4}$ | 39 |
| 14 | 42 | 70 | 52 $\frac{1}{2}$ | 42 |
| 15 | 45 | 75 | 56 $\frac{1}{4}$ | 45 |
| 16 | 48 | 80 | 60 | 48 |
| 17 | 51 | 85 | 63 $\frac{3}{4}$ | 51 |
| 18 | 54 | 90 | 67 $\frac{1}{2}$ | 54 |
| 19 | 57 | 95 | 71 $\frac{1}{4}$ | 57 |
| 20 | 60 | 100 | 75 | 60 |
| 21 | 63 | 105 | 78 $\frac{3}{4}$ | 63 |
| 22 | 66 | 110 | 82 $\frac{1}{2}$ | 66 |
| 23 | 69 | 115 | 86 $\frac{1}{4}$ | 69 |
| 24 | 72 | 120 | 90 | 72 |
| 25 | 75 | 125 | 93 $\frac{3}{4}$ | 75 |

*In estimating length of radiator allow $\frac{5}{8}$ inch for each plug or bushing.

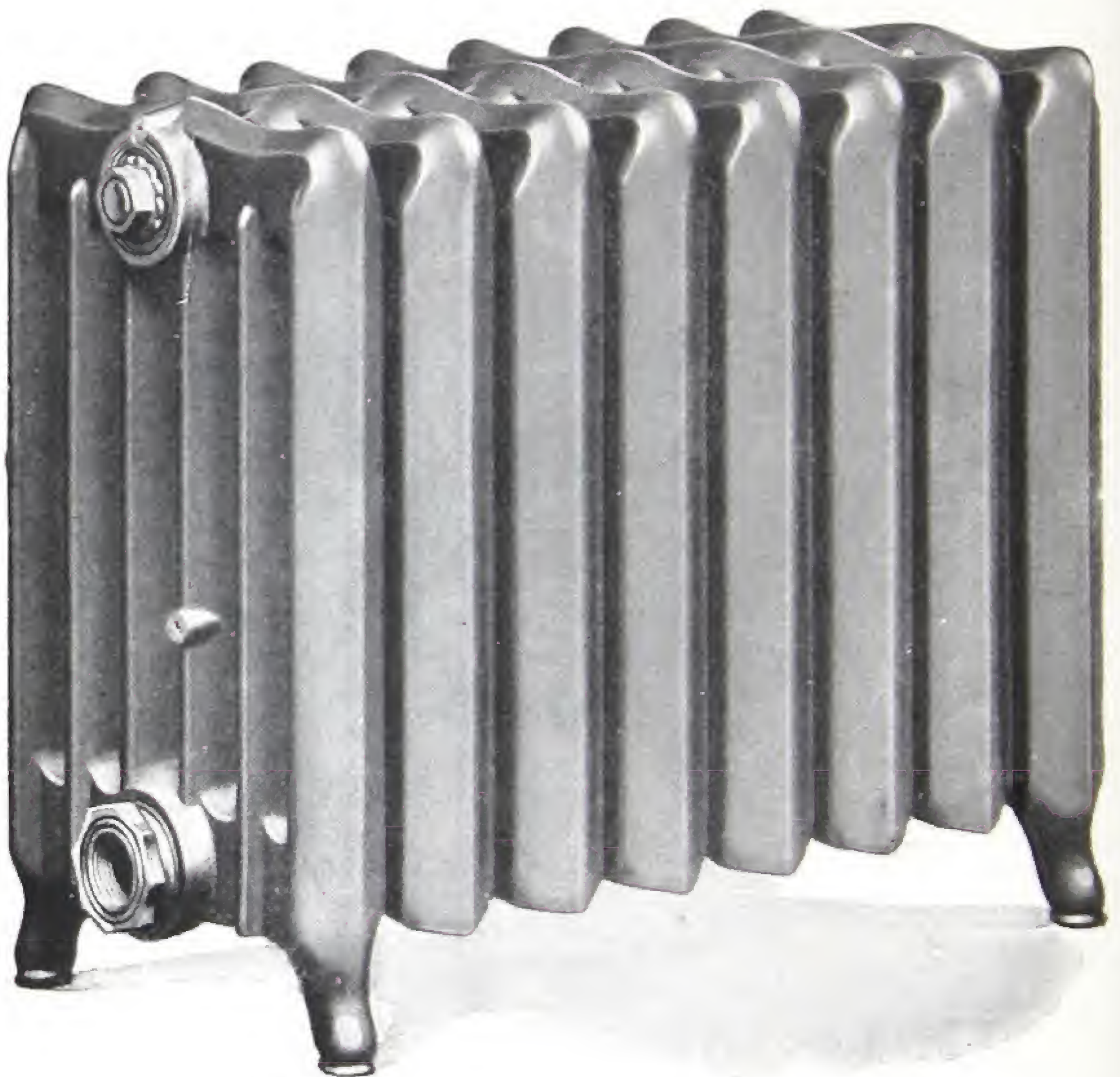
Width of section $12\frac{1}{2}$ inches. Width of leg, $12\frac{1}{2}$ inches. Additional measurements on pages 150 and 151.

Made in twin and single connections. Tapped and bushed as per schedules, on page 143, unless otherwise ordered.

Regina Six-Column Plain Window Radiator

Manufactured at Toronto Plant

For Steam and Water



See page 105.

See page 119 for List Prices.

Regina Six-Column Window Plain Radiators

For Steam or Water

Capacities and Dimensions

| No. of Sections | Length 3" per Section | HEATING SURFACE | | | | |
|-----------------------|-----------------------------|--------------------------------|--|--|--|--------------------------------|
| | | 20" in Height | 18" in Height | 16" in Height | 14" in Height | 13" in Height |
| | | 5 Sq. Ft. per Section | 4 $\frac{1}{4}$ Sq. Ft. per Section | 3 $\frac{3}{4}$ Sq. Ft. per Section | 3 $\frac{1}{4}$ Sq. Ft. per Section | 3 Sq. Ft. per Section |
| 2 | 6 | 10 | 8 $\frac{1}{2}$ | 7 $\frac{1}{2}$ | 6 $\frac{1}{2}$ | 6 |
| 3 | 9 | 15 | 12 $\frac{3}{4}$ | 11 $\frac{1}{4}$ | 9 $\frac{3}{4}$ | 9 |
| 4 | 12 | 20 | 17 | 15 | 13 | 12 |
| 5 | 15 | 25 | 21 $\frac{1}{4}$ | 18 $\frac{3}{4}$ | 16 $\frac{1}{4}$ | 15 |
| 6 | 18 | 30 | 25 $\frac{1}{2}$ | 22 $\frac{1}{2}$ | 19 $\frac{1}{2}$ | 18 |
| 7 | 21 | 35 | 29 $\frac{3}{4}$ | 26 $\frac{1}{4}$ | 22 $\frac{3}{4}$ | 21 |
| 8 | 24 | 40 | 34 | 30 | 26 | 24 |
| 9 | 27 | 45 | 38 $\frac{1}{4}$ | 33 $\frac{3}{4}$ | 29 $\frac{1}{4}$ | 27 |
| 10 | 30 | 50 | 42 $\frac{1}{2}$ | 37 $\frac{1}{2}$ | 32 $\frac{1}{2}$ | 30 |
| 11 | 33 | 55 | 46 $\frac{3}{4}$ | 41 $\frac{1}{4}$ | 35 $\frac{1}{4}$ | 33 |
| 12 | 36 | 60 | 51 | 45 | 39 | 36 |
| 13 | 39 | 65 | 55 $\frac{1}{4}$ | 48 $\frac{3}{4}$ | 42 $\frac{1}{4}$ | 39 |
| 14 | 42 | 70 | 59 $\frac{1}{2}$ | 52 $\frac{1}{2}$ | 45 $\frac{1}{2}$ | 42 |
| 15 | 45 | 75 | 63 $\frac{3}{4}$ | 56 $\frac{1}{4}$ | 48 $\frac{3}{4}$ | 45 |
| 16 | 48 | 80 | 68 | 60 | 52 | 48 |
| 17 | 51 | 85 | 72 $\frac{1}{4}$ | 63 $\frac{3}{4}$ | 55 $\frac{1}{4}$ | 51 |
| 18 | 54 | 90 | 76 $\frac{1}{2}$ | 67 $\frac{1}{2}$ | 58 $\frac{1}{2}$ | 54 |
| 19 | 57 | 95 | 80 $\frac{3}{4}$ | 71 $\frac{1}{4}$ | 61 $\frac{3}{4}$ | 57 |
| 20 | 60 | 100 | 85 | 75 | 65 | 60 |
| 21 | 63 | 105 | 89 $\frac{1}{4}$ | 78 $\frac{3}{4}$ | 68 $\frac{1}{4}$ | 63 |
| 22 | 66 | 110 | 93 $\frac{1}{2}$ | 82 $\frac{1}{2}$ | 71 $\frac{1}{2}$ | 66 |
| 23 | 69 | 115 | 97 $\frac{3}{4}$ | 86 $\frac{1}{4}$ | 74 $\frac{3}{4}$ | 69 |
| 24 | 72 | 120 | 102 | 90 | 78 | 72 |
| 25 | 75 | 125 | 106 $\frac{1}{4}$ | 93 $\frac{3}{4}$ | 81 $\frac{1}{4}$ | 75 |

*In estimating length of radiator allow $\frac{5}{8}$ inch for each plug or bushing.

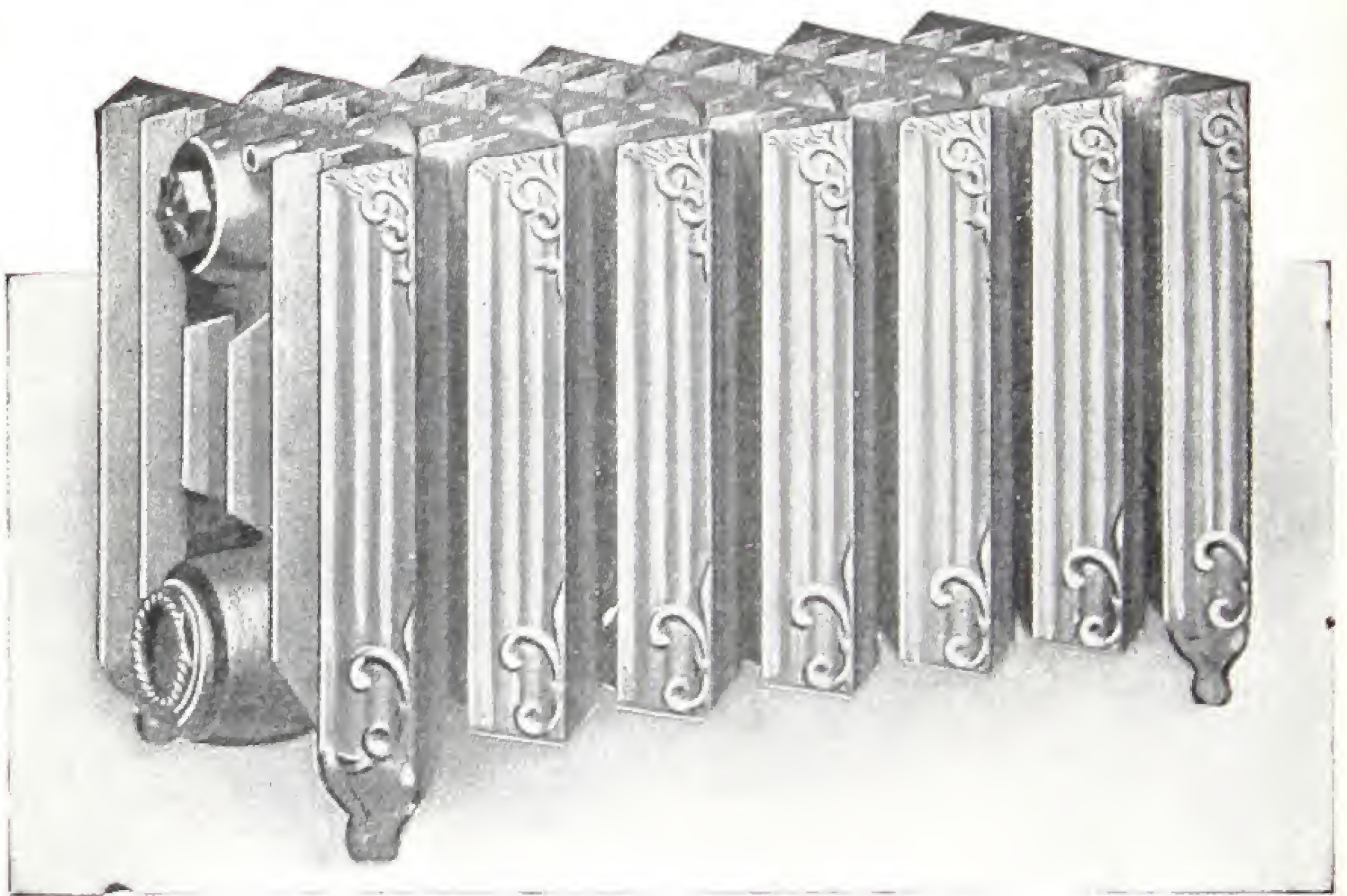
Width of section $12\frac{1}{16}$ inches. Width of leg $12\frac{1}{16}$ inches. Additional measurements on pages 150 and 151.

Made in twin and single connections. Tapped and bushed as per schedules, on page 143, unless otherwise ordered.

Acme Flue Five-Column Window Radiator

Manufactured at Toronto Plant

For Steam and Water



See page 107.

See page 119 for List Prices.

Acme Flue Five-Column Window Radiators

For Steam or Water

Capacities and Dimensions

| No. of Sections | Length 3" per Section | HEATING SURFACE | | | | |
|-----------------------|-----------------------------|--------------------------------|--|--|--------------------------------|--|
| | | 20" in Height | 18" in Height | 16" in Height | 14" in Height | 13" in Height |
| | | 6 Sq. Ft. per Section | 5 $\frac{1}{3}$ Sq. Ft. per Section | 4 $\frac{2}{3}$ Sq. Ft. per Section | 4 Sq. Ft. per Section | 3 $\frac{2}{3}$ Sq. Ft. per Section |
| 2 | 6 | 12 | 10 $\frac{2}{3}$ | 9 $\frac{1}{3}$ | 8 | 7 $\frac{1}{3}$ |
| 3 | 9 | 18 | 16 | 14 | 12 | 11 |
| 4 | 12 | 24 | 21 $\frac{1}{3}$ | 18 $\frac{2}{3}$ | 16 | 14 $\frac{2}{3}$ |
| 5 | 15 | 30 | 26 $\frac{2}{3}$ | 23 $\frac{1}{3}$ | 20 | 18 $\frac{1}{3}$ |
| 6 | 18 | 36 | 32 | 28 | 24 | 22 |
| 7 | 21 | 42 | 37 $\frac{1}{3}$ | 32 $\frac{2}{3}$ | 28 | 25 $\frac{2}{3}$ |
| 8 | 24 | 48 | 42 $\frac{2}{3}$ | 37 $\frac{1}{3}$ | 32 | 29 $\frac{1}{3}$ |
| 9 | 27 | 54 | 48 | 42 | 36 | 33 |
| 10 | 30 | 60 | 53 $\frac{1}{3}$ | 46 $\frac{2}{3}$ | 40 | 36 $\frac{2}{3}$ |
| 11 | 33 | 66 | 58 $\frac{2}{3}$ | 51 $\frac{1}{3}$ | 44 | 40 $\frac{1}{3}$ |
| 12 | 36 | 72 | 64 | 56 | 48 | 44 |
| 13 | 39 | 78 | 69 $\frac{1}{3}$ | 60 $\frac{2}{3}$ | 52 | 47 $\frac{2}{3}$ |
| 14 | 42 | 84 | 74 $\frac{2}{3}$ | 65 $\frac{1}{3}$ | 56 | 51 $\frac{1}{3}$ |
| 15 | 45 | 90 | 80 | 70 | 60 | 55 |
| 16 | 48 | 96 | 85 $\frac{1}{3}$ | 74 $\frac{2}{3}$ | 64 | 58 $\frac{2}{3}$ |
| 17 | 51 | 102 | 90 $\frac{2}{3}$ | 79 $\frac{1}{3}$ | 68 | 62 $\frac{1}{3}$ |
| 18 | 54 | 108 | 96 | 84 | 72 | 66 |
| 19 | 57 | 114 | 101 $\frac{1}{3}$ | 88 $\frac{2}{3}$ | 76 | 69 $\frac{2}{3}$ |
| 20 | 60 | 120 | 106 $\frac{2}{3}$ | 93 $\frac{1}{3}$ | 80 | 73 $\frac{1}{3}$ |
| 21 | 63 | 126 | 112 | 98 | 84 | 77 |
| 22 | 66 | 132 | 117 $\frac{1}{3}$ | 102 $\frac{2}{3}$ | 88 | 80 $\frac{2}{3}$ |
| 23 | 69 | 138 | 122 $\frac{2}{3}$ | 107 $\frac{1}{3}$ | 92 | 84 $\frac{1}{3}$ |
| 24 | 72 | 144 | 128 | 112 | 96 | 88 |
| 25 | 75 | 150 | 133 $\frac{1}{3}$ | 116 $\frac{2}{3}$ | 100 | 91 $\frac{2}{3}$ |

*In estimating length of radiator allow $\frac{5}{8}$ inch for each plug or bushing.

Width of section $12\frac{3}{4}$ inches. Width of leg, $12\frac{3}{4}$ inches. Additional measurements on pages 150 and 151.

Made in twin and single connections. Tapped and bushed as per schedules on page 143, unless otherwise ordered.

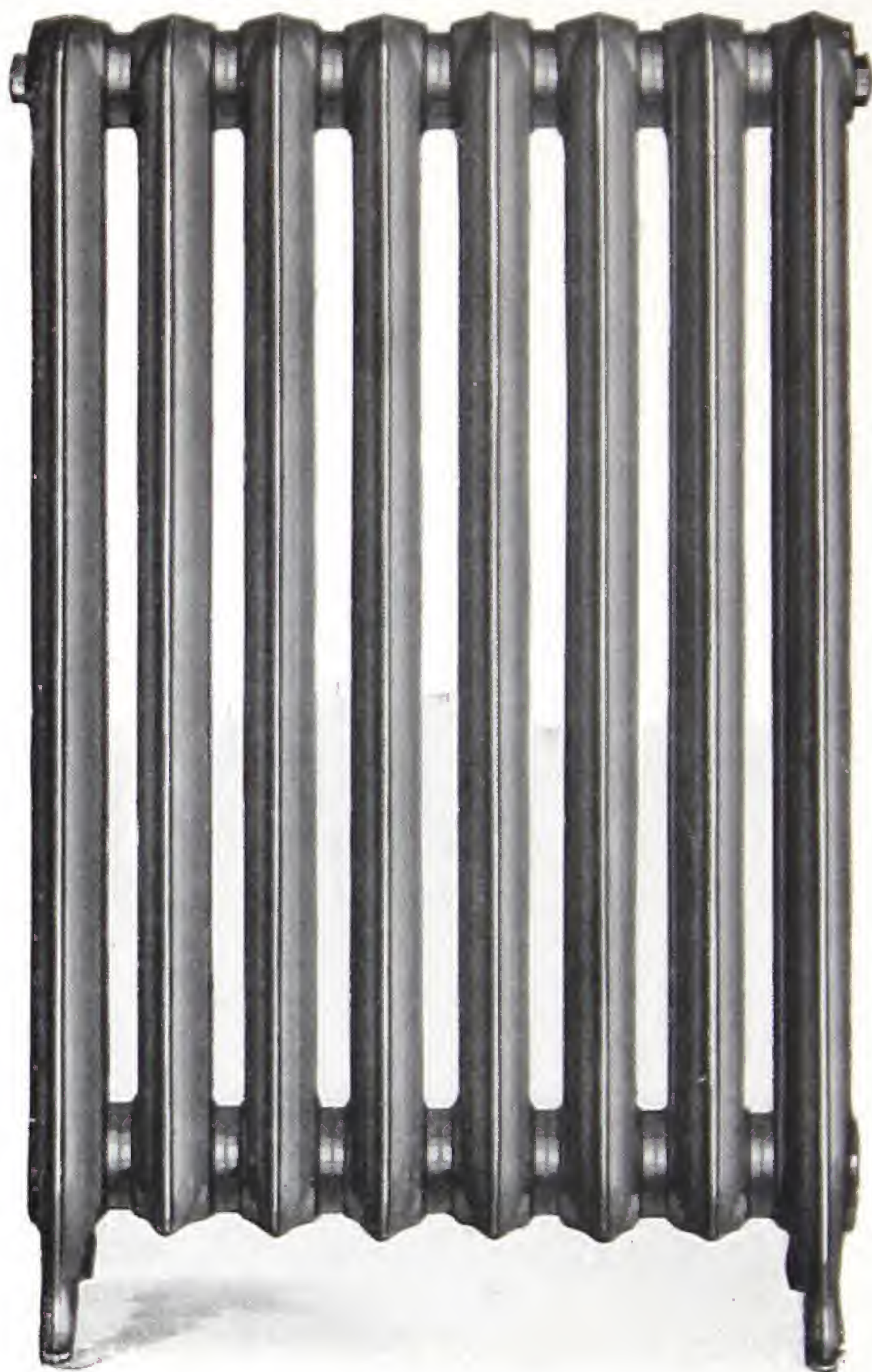
Peerless Hospital Radiators

Manufactured at Brantford Plant

Plain Two-Column

Also Made in Three- and Four-Column (See Note)

For Steam or Water



Made especially for hospitals, sanitariums and all buildings where a Radiator having separated sections easily cleaned, supplies the need for a heating surface which meets all the sanitary demands of such institutions.

Note.—2 column Peerless Hospital Radiators made in 26", 32" and 38" heights only. 3 and 4 column Peerless Hospital Radiators made in 26", 32", 38" and 45" Heights only. For rating on 3 and 4 column, see pages 87 and 89.

Each section is $7\frac{3}{8}$ inches wide. Width of legs, $8\frac{1}{2}$ inches.

Add $\frac{5}{8}$ inch to length for each bushing.

For other measurements, see pages 144 and 145.

See page 109. See page 119 for List Prices.

Peerless Hospital Radiators

Plain Two-Column

For Steam or Water

| No. of Sec- tions | * Length 3 1/2 in. per Sec. | HEATING SURFACE—SQUARE FEET | | | | | |
|----------------------------|--------------------------------------|---|---|---|---|---|---|
| | | 45-in. Height 5 sq. ft. per Sec. | 38-in. Height 4 sq. ft. per Sec. | 32-in. Height 3 1/3 sq. ft. per Sec. | 26-in. Height 2 2/3 sq. ft. per Sec. | 23-in. Height 2 1/3 sq. ft. per Sec. | 20-in. Height 2 sq. ft. per Sec. |
| 2 | 6 | 10 | 8 | 6 2/3 | 5 1/3 | 5 2/3 | 4 |
| 3 | 9 1/2 | 15 | 12 | 10 | 8 | 7 | 6 |
| 4 | 13 | 20 | 16 | 13 1/3 | 10 2/3 | 9 1/3 | 8 |
| 5 | 16 1/2 | 25 | 20 | 16 2/3 | 13 1/3 | 11 2/3 | 10 |
| 6 | 20 | 30 | 24 | 20 | 16 | 14 | 12 |
| 7 | 23 1/2 | 35 | 28 | 23 1/3 | 18 2/3 | 16 1/3 | 14 |
| 8 | 27 | 40 | 32 | 26 2/3 | 21 1/3 | 18 2/3 | 16 |
| 9 | 30 1/2 | 45 | 36 | 30 | 24 | 21 | 18 |
| 10 | 34 | 50 | 40 | 33 1/3 | 26 2/3 | 23 1/3 | 20 |
| 11 | 37 1/2 | 55 | 44 | 36 2/3 | 29 1/3 | 25 2/3 | 22 |
| 12 | 41 | 60 | 48 | 40 | 32 | 28 | 24 |
| 13 | 44 1/2 | 65 | 52 | 43 1/3 | 34 2/3 | 30 1/3 | 26 |
| 14 | 48 | 70 | 56 | 46 2/3 | 37 1/3 | 32 2/3 | 28 |
| 15 | 51 1/2 | 75 | 60 | 50 | 40 | 35 | 30 |
| 16 | 55 | 80 | 64 | 53 1/3 | 43 2/3 | 37 1/3 | 32 |
| 17 | 58 1/2 | 85 | 68 | 56 2/3 | 45 1/3 | 39 2/3 | 34 |
| 18 | 62 | 90 | 72 | 60 | 48 | 42 | 36 |
| 19 | 65 1/2 | 95 | 76 | 63 1/3 | 50 2/3 | 44 1/3 | 38 |
| 20 | 69 | 100 | 80 | 66 2/3 | 53 1/3 | 46 2/3 | 40 |
| 21 | 72 1/2 | 105 | 84 | 70 | 56 | 49 | 42 |
| 22 | 76 | 110 | 88 | 73 1/3 | 58 2/3 | 51 1/3 | 44 |
| 23 | 79 1/2 | 115 | 92 | 76 2/3 | 61 1/3 | 53 2/3 | 46 |
| 24 | 83 | 120 | 96 | 80 | 64 | 56 | 48 |
| 25 | 86 1/2 | 125 | 100 | 83 1/3 | 66 2/3 | 58 1/3 | 50 |

Three- and Four-Column

See Rating on pages 87 and 89. Length, 3 1/2 in. Centre to Centre.

TAPPINGS.—2 inches and bushed as per list on page 143.

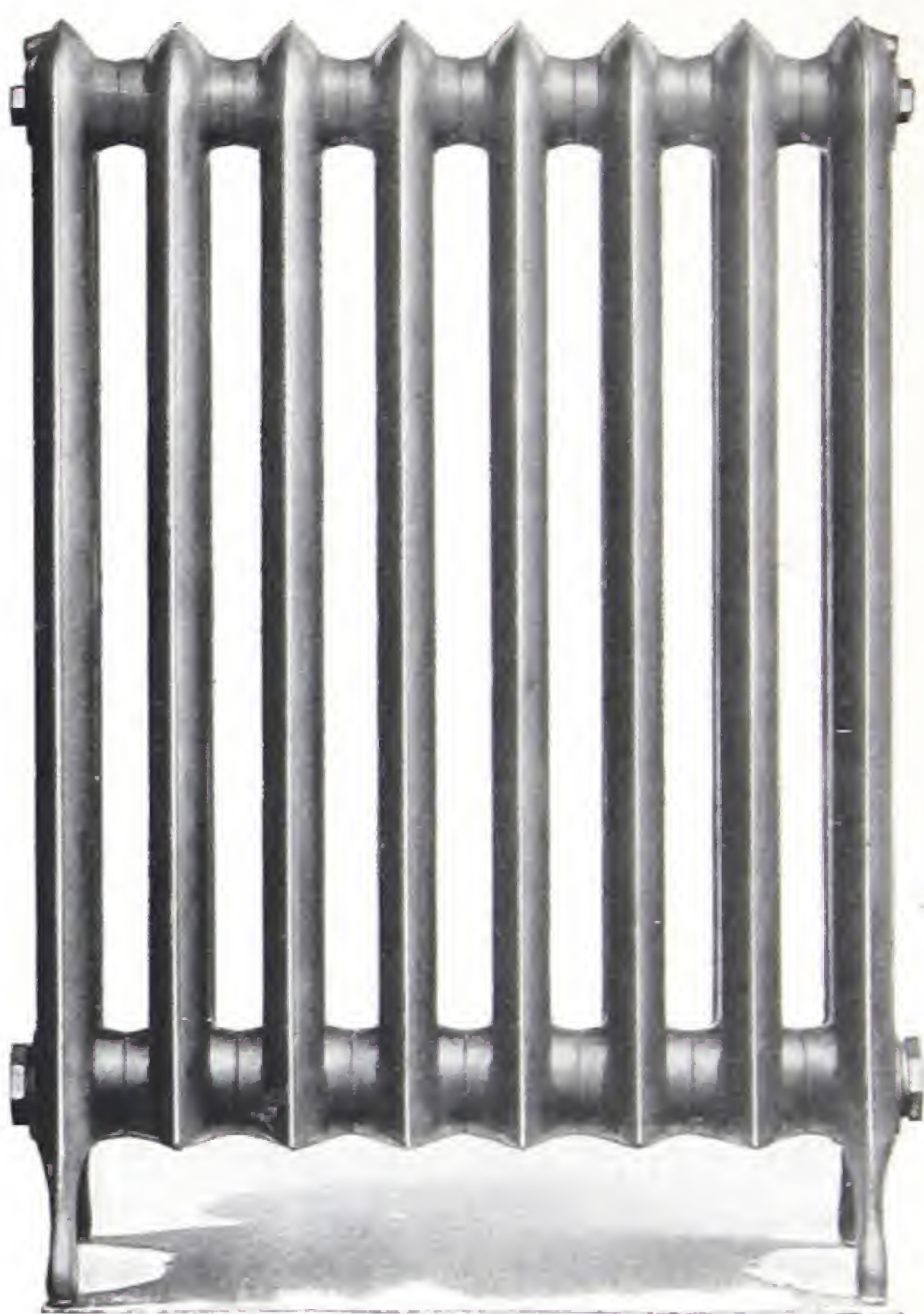
CONNECTIONS.—Extra-heavy right and left threaded nipples at top and bottom; not made with bottom connection only.

*For other measurements, see pages 144 and 145.

Saxon Plain Two-Column Hospital Radiators

Manufactured at Toronto Plant

For Steam and Water



Note.—Saxon Plain Hospital Type Radiator also made in 3-column, $3\frac{1}{2}$ " centres (see page 87), and in 4-column, $3\frac{1}{2}$ " centres, see page 89 for capacities.

These Radiators are made with special wide hubs, making the distance from centre to centre of loops $3\frac{1}{2}$ inches and allowing easy access to the sections for cleaning purposes.

See page 111.

See page 119 for List Prices.

Saxon Plain Two-Column Hospital Radiators

For Steam or Water

Capacities and Dimensions

| No. of Sections | * Length 3 1/2" per Section | HEATING SURFACE | | | | | | |
|-----------------------|---|--------------------------------|--------------------------------|------------------------------------|--------------------------------|------------------------------------|------------------------------------|--------------------------------|
| | | 45" in Height | 38" in Height | 32" in Height | 30" in Height | 26" in Height | 23" in Height | 20" in Height |
| | | 5 Sq. Ft. per Section | 4 Sq. Ft. per Section | 3 1/3 Sq. Ft. per Section | 3 Sq. Ft. per Section | 2 2/3 Sq. Ft. per Section | 2 1/3 Sq. Ft. per Section | 2 Sq. Ft. per Section |
| 2 | 6 | 10 | 8 | 6 2/3 | 6 | 5 1/3 | 4 2/3 | 4 |
| 3 | 9 1/2 | 15 | 12 | 10 | 9 | 8 | 7 | 6 |
| 4 | 13 | 20 | 16 | 13 1/3 | 12 | 10 2/3 | 9 1/3 | 8 |
| 5 | 16 1/2 | 25 | 20 | 16 2/3 | 15 | 13 1/3 | 11 2/3 | 10 |
| 6 | 20 | 30 | 24 | 20 | 18 | 16 | 14 | 12 |
| 7 | 23 1/2 | 35 | 28 | 23 1/3 | 21 | 18 2/3 | 16 1/3 | 14 |
| 8 | 27 | 40 | 32 | 26 2/3 | 24 | 21 1/3 | 18 2/3 | 16 |
| 9 | 30 1/2 | 45 | 36 | 30 | 27 | 24 | 21 | 18 |
| 10 | 34 | 50 | 40 | 33 1/3 | 30 | 26 2/3 | 23 1/3 | 20 |
| 11 | 37 1/2 | 55 | 44 | 36 2/3 | 33 | 29 1/3 | 25 2/3 | 22 |
| 12 | 41 | 60 | 48 | 40 | 36 | 32 | 28 | 24 |
| 13 | 44 1/2 | 65 | 52 | 43 1/3 | 39 | 34 2/3 | 30 1/3 | 26 |
| 14 | 48 | 70 | 56 | 46 2/3 | 42 | 37 1/3 | 32 2/3 | 28 |
| 15 | 51 1/2 | 75 | 60 | 50 | 45 | 40 | 35 | 30 |
| 16 | 55 | 80 | 64 | 53 1/3 | 48 | 42 2/3 | 37 1/3 | 32 |
| 17 | 58 1/2 | 85 | 68 | 56 2/3 | 51 | 45 1/3 | 39 2/3 | 34 |
| 18 | 62 | 90 | 72 | 60 | 54 | 48 | 42 | 36 |
| 19 | 65 1/2 | 95 | 76 | 63 1/3 | 57 | 50 2/3 | 44 1/3 | 38 |
| 20 | 69 | 100 | 80 | 66 2/3 | 60 | 53 1/3 | 46 2/3 | 40 |
| 21 | 72 1/2 | 105 | 84 | 70 | 63 | 56 | 49 | 42 |
| 22 | 76 | 110 | 88 | 73 1/3 | 66 | 58 2/3 | 51 1/3 | 44 |
| 23 | 79 1/2 | 115 | 92 | 76 2/3 | 69 | 61 1/3 | 53 2/3 | 46 |
| 24 | 83 | 120 | 96 | 80 | 72 | 64 | 56 | 48 |
| 25 | 86 1/2 | 125 | 100 | 83 1/3 | 75 | 66 2/3 | 58 1/3 | 50 |

*In estimating length of radiator allow 5/8 inch for each plug or bushing.

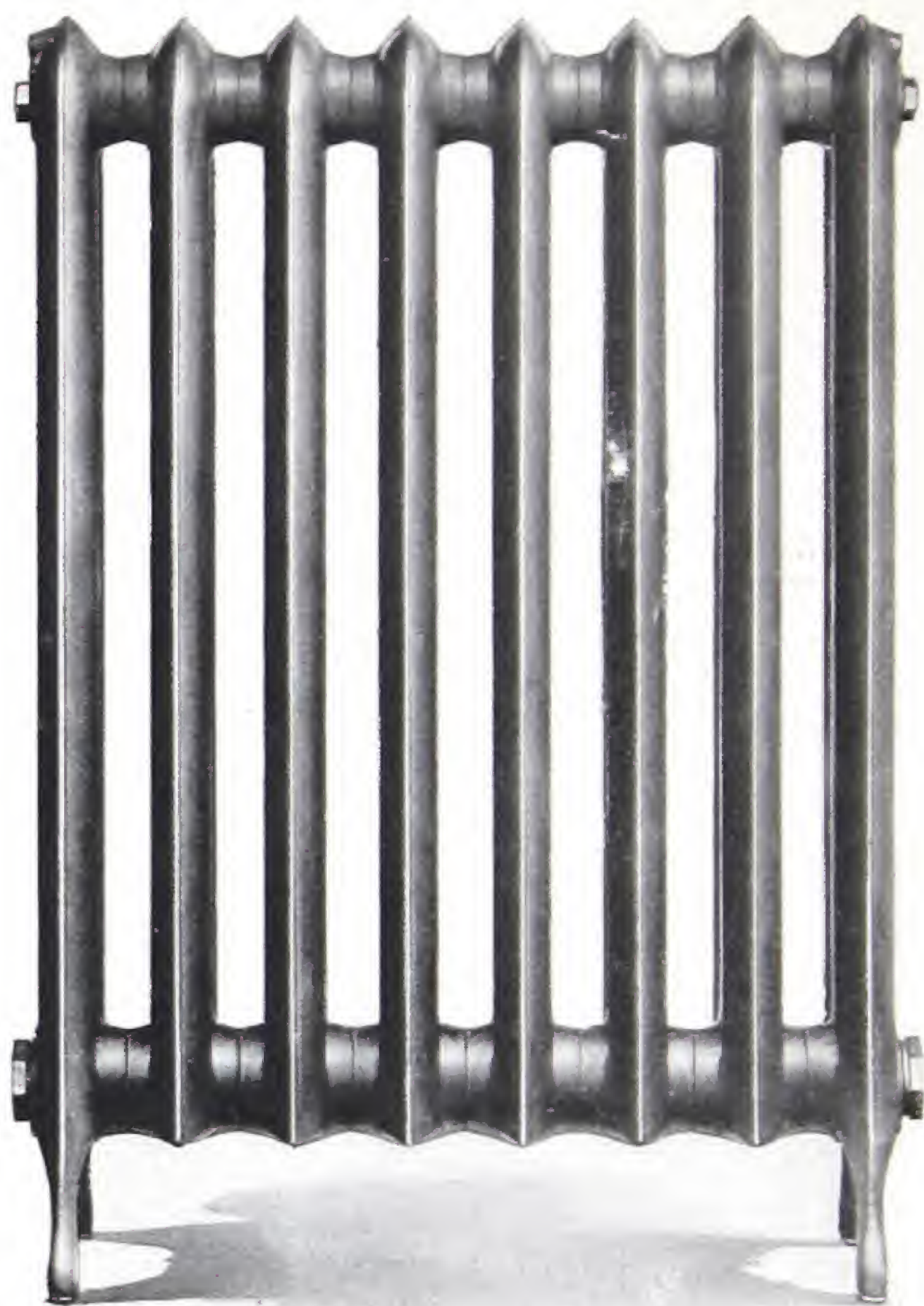
Width of section 7 3/8 inches, width of legs 8 1/4 inches. Additional measurements on pages 144 and 145. Made in twin and single connections.

Tapped and bushed as per schedules on page 143, unless otherwise ordered.

Saxon Plain Three-Column Hospital Radiator

Manufactured at Toronto Plant

For Steam and Water



Note.—Saxon Plain Hospital Type Radiators also made in four-column, $3\frac{1}{2}$ " centres. See page 89 for capacities.

These Radiators are made with special wide hubs, making the distance from centre to centre of loops $3\frac{1}{2}$ inches and allowing easy access to the sections for cleaning purposes.

See page 113.

See page 119 for List Prices.

Saxon Plain Three-Column Hospital Radiators

Capacities and Dimensions

| No. of Sec- tion | * Length 3 1/4 in. per Section | HEATING SURFACE | | | | | |
|---------------------------|--|--------------------------------|--------------------------------|------------------------------------|------------------------------------|--------------------------------|------------------------------------|
| | | 44" in Height | 38" in Height | 32" in Height | 26" in Height | 22" in Height | 18" in Height |
| | | 6 Sq. Ft. per Section | 5 Sq. Ft. per Section | 4 1/2 Sq. Ft. per Section | 3 3/4 Sq. Ft. per Section | 3 Sq. Ft. per Section | 2 1/4 Sq. Ft. per Section |
| 2 | 6 | 12 | 10 | 9 | 7 1/2 | 6 | 4 1/2 |
| 3 | 9 1/2 | 18 | 15 | 13 1/2 | 11 1/4 | 9 | 6 3/4 |
| 4 | 13 | 24 | 20 | 18 | 15 | 12 | 9 |
| 5 | 16 1/2 | 30 | 25 | 22 1/2 | 18 3/4 | 15 | 11 1/4 |
| 6 | 20 | 36 | 30 | 27 | 22 1/2 | 18 | 13 1/2 |
| 7 | 23 1/2 | 42 | 35 | 31 1/2 | 26 1/4 | 21 | 15 3/4 |
| 8 | 27 | 48 | 40 | 36 | 30 | 24 | 18 |
| 9 | 30 1/2 | 54 | 45 | 40 1/2 | 33 3/4 | 27 | 20 1/4 |
| 10 | 34 | 60 | 50 | 45 | 37 1/2 | 30 | 22 1/2 |
| 11 | 37 1/2 | 66 | 55 | 49 1/2 | 41 1/4 | 33 | 24 3/4 |
| 12 | 41 | 72 | 60 | 54 | 45 | 36 | 27 |
| 13 | 44 1/2 | 78 | 65 | 58 1/2 | 48 3/4 | 39 | 29 1/4 |
| 14 | 48 | 84 | 70 | 63 | 52 1/2 | 42 | 31 1/2 |
| 15 | 51 1/2 | 90 | 75 | 67 1/2 | 56 1/4 | 45 | 33 3/4 |
| 16 | 55 | 96 | 80 | 72 | 60 | 48 | 36 |
| 17 | 58 1/2 | 102 | 85 | 76 1/2 | 63 3/4 | 51 | 38 1/4 |
| 18 | 62 | 108 | 90 | 81 | 67 1/2 | 54 | 40 1/2 |
| 19 | 65 1/2 | 114 | 95 | 85 1/2 | 71 1/4 | 57 | 42 3/4 |
| 20 | 69 | 120 | 100 | 90 | 75 | 60 | 45 |
| 21 | 72 1/2 | 126 | 105 | 94 1/2 | 78 3/4 | 63 | 47 1/4 |
| 22 | 76 | 132 | 110 | 99 | 82 1/2 | 66 | 49 1/2 |
| 23 | 79 1/2 | 138 | 115 | 103 1/2 | 86 1/4 | 69 | 51 3/4 |
| 24 | 83 | 144 | 120 | 108 | 90 | 72 | 54 |
| 25 | 86 1/2 | 150 | 125 | 112 1/2 | 93 3/4 | 75 | 56 1/4 |

*In estimating length of radiator allow 5/8 inch for each plug or bushing.

Width of section 9 inches, width of legs 9 1/4 inches. Additional measurements on pages 144 and 145. Made in twin and single connections.

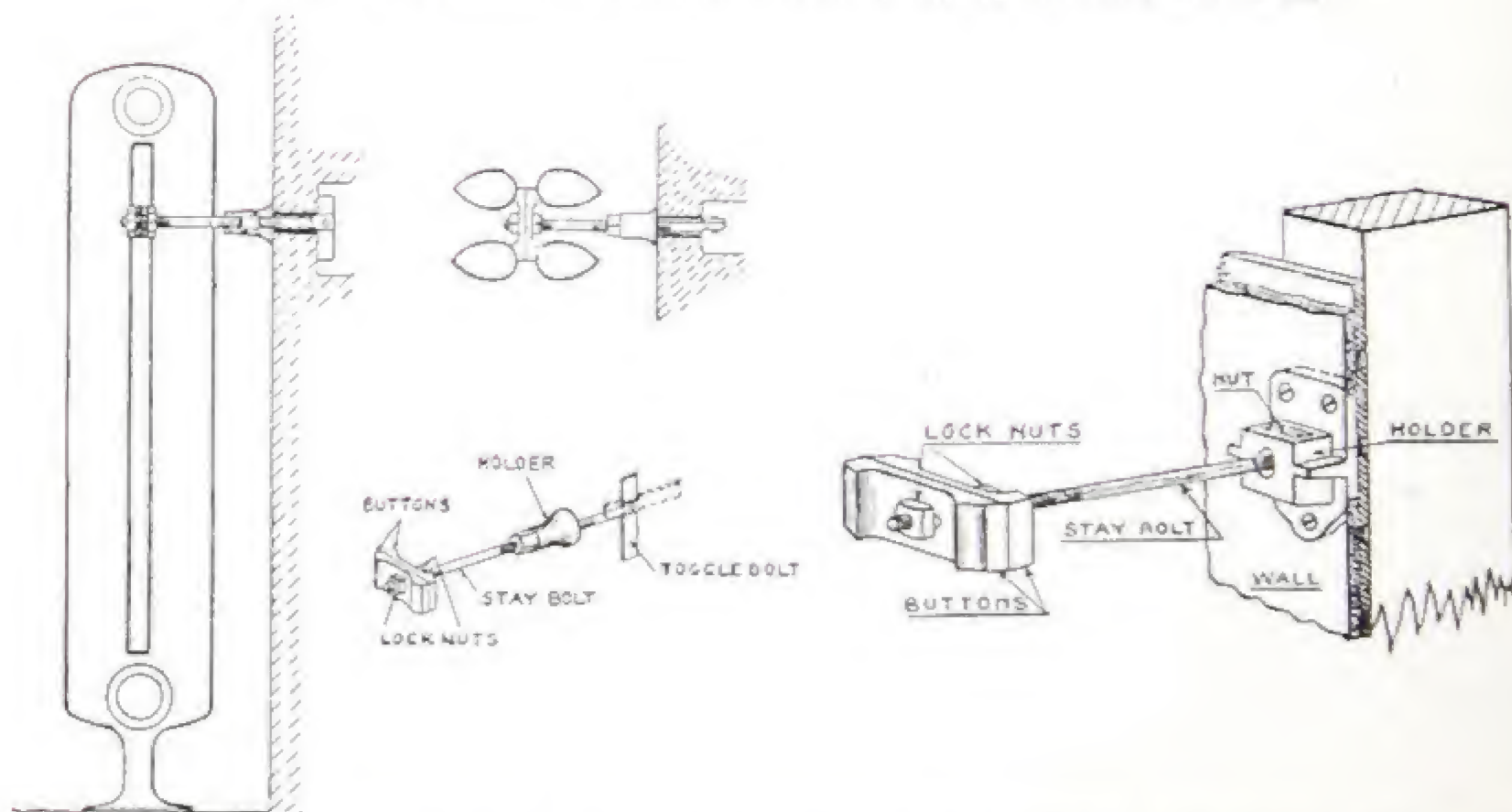
Tapped and bushed as per schedules on page 143, unless otherwise ordered.

Saxon Sanitary Pedestal Radiator

Manufactured at Toronto Plant
For Steam or Water



Registered 1921
Two- or Three-Column with 6-inch Pedestal Leg.



The illustrations show how to support the Saxon Sanitary Pedestal Radiator from a hollow, tile or plaster wall.

See page 115.

See page 119 for List Prices.

Saxon Sanitary Pedestal Radiator

Two-Column

Plain—Round Top—For Steam or Water
Capacities and Dimensions

| No. of Sections | * Length 3 ½ in. per Section | HEATING SURFACE | | | | | | |
|-----------------------|--|-------------------------------------|-------------------------------------|---------------------------------------|-------------------------------------|---------------------------------------|---------------------------------------|-------------------------------------|
| | | 45" in Height | 38" in Height | 32" in Height | 30" in Height | 26" in Height | 23" in Height | 20" in Height |
| | | 5 Sq. Ft. per Sec- tion | 4 Sq. Ft. per Sec- tion | 3 ⅓ Sq. Ft. per Sec- tion | 3 Sq. Ft. per Sec- tion | 2 ⅔ Sq. Ft. per Sec- tion | 2 ⅓ Sq. Ft. per Sec- tion | 2 Sq. Ft. per Sec- tion |
| 2 | 6 | 10 | 8 | 6 ⅔ | 6 | 5 ⅓ | 4 ⅔ | 4 |
| 3 | 9 ½ | 15 | 12 | 10 | 9 | 8 | 7 | 6 |
| 4 | 13 | 20 | 16 | 13 ⅓ | 12 | 10 ⅔ | 9 ⅓ | 8 |
| 5 | 16 ½ | 25 | 20 | 16 ⅔ | 15 | 13 ⅓ | 11 ⅔ | 10 |
| 6 | 20 | 30 | 24 | 20 | 18 | 16 | 14 | 12 |
| 7 | 23 ½ | 35 | 28 | 23 ⅓ | 21 | 18 ⅔ | 16 ⅓ | 14 |
| 8 | 27 | 40 | 32 | 26 ⅔ | 24 | 21 ⅓ | 18 ⅔ | 16 |
| 9 | 30 ½ | 45 | 36 | 30 | 27 | 24 | 21 | 18 |
| 10 | 34 | 50 | 40 | 33 ⅓ | 30 | 26 ⅔ | 23 ⅓ | 20 |
| 11 | 37 ½ | 55 | 44 | 36 ⅔ | 33 | 29 ⅓ | 25 ⅔ | 22 |
| 12 | 41 | 60 | 48 | 40 | 36 | 32 | 28 | 24 |
| 13 | 44 ½ | 65 | 52 | 43 ⅓ | 39 | 34 ⅔ | 30 ⅓ | 26 |
| 14 | 48 | 70 | 56 | 46 ⅔ | 42 | 37 ⅓ | 32 ⅔ | 28 |
| 15 | 51 ½ | 75 | 60 | 50 | 45 | 40 | 35 | 30 |

*In estimating length of radiator allow ⅝ inch for each plug or bushing.

Width of section 7 ⅜ inches, width of legs 8 ¼ inches.

Saxon Sanitary Pedestal Radiator

Three-Column

Plain—Round Top—For Steam or Water
Capacities and Dimensions

| No. of Sections | * Length 3 ½ in. per Section | HEATING SURFACE | | | | | |
|-----------------------|--|--------------------------------|--------------------------------|----------------------------------|----------------------------------|--------------------------------|----------------------------------|
| | | 44" in Height | 38" in Height | 32" in Height | 26" in Height | 22" in Height | 18" in Height |
| | | 6 Sq. Ft. per Section | 5 Sq. Ft. per Section | 4 ½ Sq. Ft. per Section | 3 ¾ Sq. Ft. per Section | 3 Sq. Ft. per Section | 2 ¼ Sq. Ft. per Section |
| 2 | 6 | 12 | 10 | 9 | 7 ½ | 6 | 4 ½ |
| 3 | 9 ½ | 18 | 15 | 13 ½ | 11 ¼ | 9 | 6 ¾ |
| 4 | 13 | 24 | 20 | 18 | 15 | 12 | 9 |
| 5 | 16 ½ | 30 | 25 | 22 ½ | 18 ¾ | 15 | 11 ¼ |
| 6 | 20 | 36 | 30 | 27 | 22 ½ | 18 | 13 ½ |
| 7 | 23 ½ | 42 | 35 | 31 ½ | 26 ¼ | 21 | 15 ¾ |
| 8 | 27 | 48 | 40 | 36 | 30 | 24 | 18 |
| 9 | 30 ½ | 54 | 45 | 40 ½ | 33 ¾ | 27 | 20 ¼ |
| 10 | 34 | 60 | 50 | 45 | 37 ½ | 30 | 22 ½ |
| 11 | 37 ½ | 66 | 55 | 49 ½ | 41 ¼ | 33 | 24 ¾ |
| 12 | 41 | 72 | 60 | 54 | 45 | 36 | 27 |
| 13 | 44 ½ | 78 | 65 | 58 ½ | 48 ¾ | 39 | 29 ¼ |
| 14 | 48 | 84 | 70 | 63 | 52 ½ | 42 | 31 ½ |
| 15 | 51 ½ | 90 | 75 | 67 ½ | 56 ¼ | 45 | 33 ¾ |

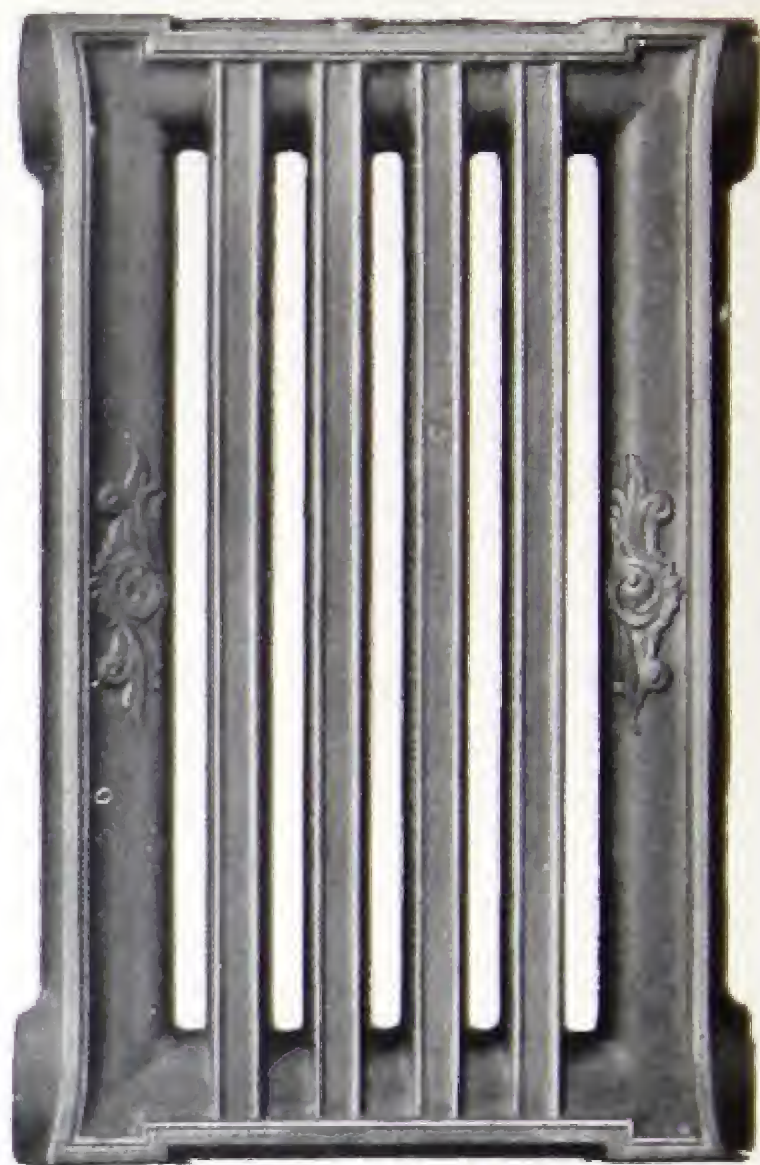
*In estimating length of radiator allow ⅝ inch for each plug or bushing.

Width of section 9 inches, width of legs 9 ¼ inches.

Peerless Wall Radiators

Manufactured at Brantford Plant

Peerless Wall Radiators should always be assembled with bars vertical to secure greatest heating efficiency. The 7- and 9-foot sections are therefore made in two styles: Nos. 7-A and 9-A have bars running crosswise of the section and are regularly tapped for connecting end



No. 7-B



No. 9-B

to end as illustrated. Nos. 7-B and 9-B have bars running lengthwise of the section and are regularly tapped for connecting side by side as illustrated.

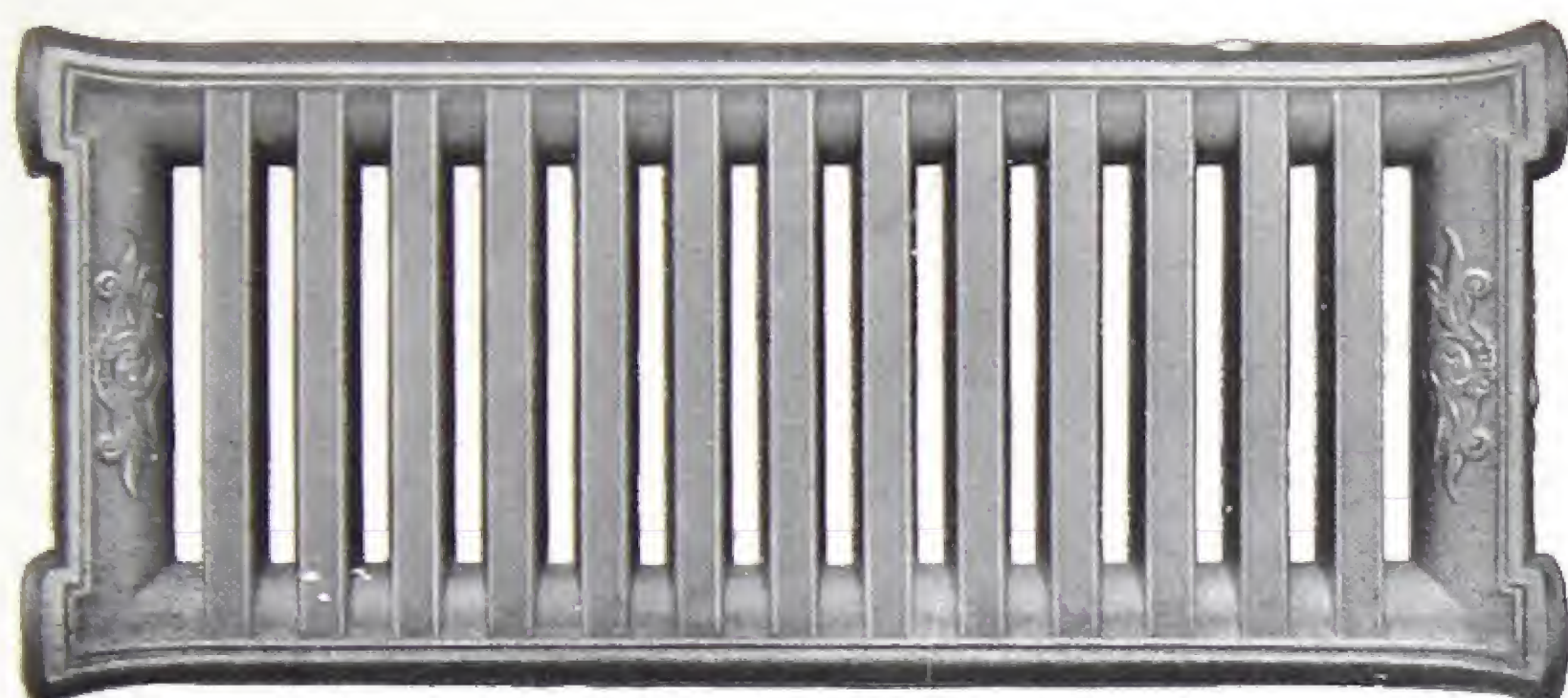
For Ratings and Measurements of Sections, see page 117.

For additional Measurements and Methods of Assembling, see pages 120 to 125 inclusive.

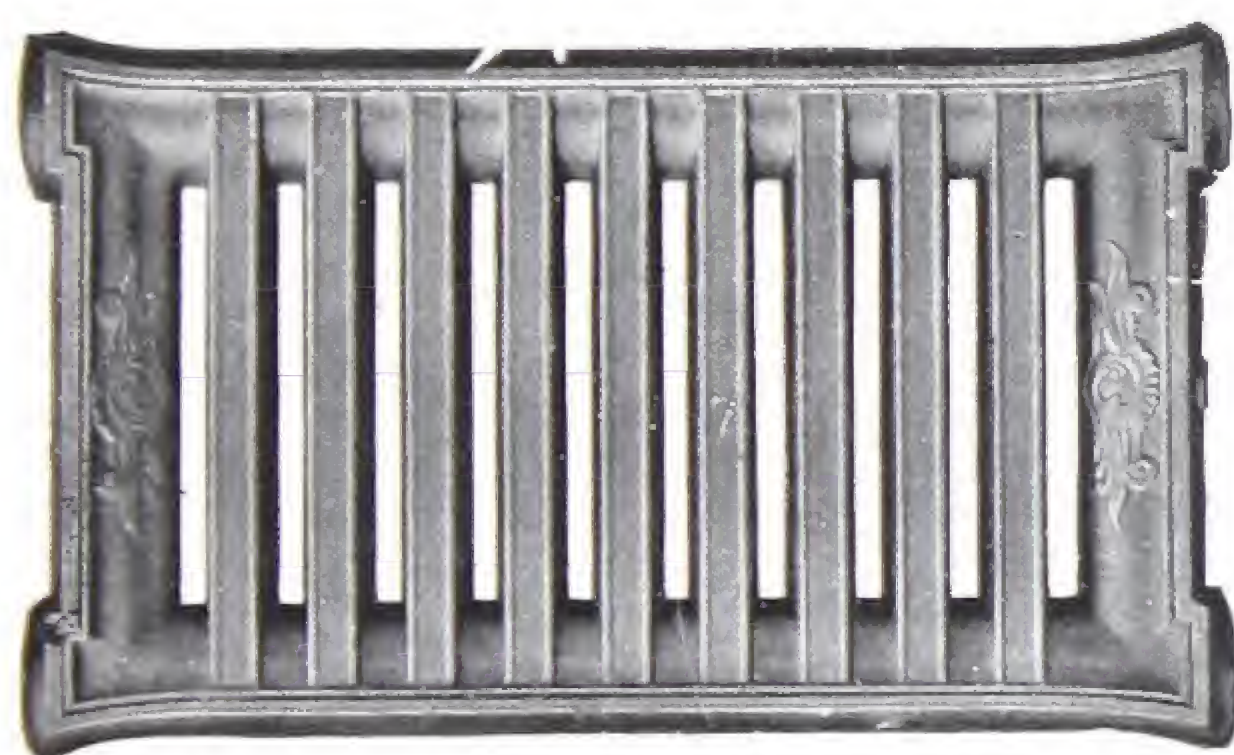
See page 119 for List Prices.

Peerless Wall Radiators—Continued

Manufactured at Brantford Plant



No. 9-A



No. 7-A

See page 119 for List Prices.

Rating and Measurement of Sections

| Sections No. | Height-Inches | Length or Width Inches | Thickness Inches | Thickness (with bracket) Inches | Heating Surface Sq. ft. |
|--------------|------------------|------------------------|------------------|---------------------------------|-------------------------|
| 7-A | $13\frac{5}{16}$ | $21\frac{7}{8}$ | $2\frac{7}{8}$ | $3\frac{1}{2}$ | 7 |
| 7-B | $21\frac{7}{8}$ | $13\frac{5}{16}$ | $3\frac{1}{16}$ | $3\frac{11}{16}$ | 7 |
| 9-A | $13\frac{5}{16}$ | $29\frac{1}{16}$ | $2\frac{7}{8}$ | $3\frac{1}{2}$ | 9 |
| 9-B | $29\frac{1}{16}$ | $13\frac{5}{16}$ | $3\frac{1}{16}$ | $3\frac{11}{16}$ | 9 |

Ontario Plain Wall Radiator

Manufactured at Toronto Plant
For Steam or Water



5-Foot Section



12-Foot Section

Capacities and Dimensions

| Pattern | Square Feet Heating Surface | Equivalent of 1" Pipe | Length Inches | Width Inches | Thickness Inches | Distance between centres of Tappings, inches | |
|-------------------------|--------------------------------|--------------------------|------------------|-----------------|--------------------------------|--|--------------------------------|
| | | | | | | End of Section | Side of Section |
| Ontario Plain | 5 | 15 | 17 | 13 | 3 | 10 | 14 ¹ / ₈ |
| " " | 7 | 21 | 24 | 13 | 3 | 10 | 21 |
| " " | 9 | 27 | 24 | 13 | 3 ³ / ₁₆ | 10 | 21 |
| " " | 12 | 36 | 28 | 15 | 3 ⁵ / ₈ | 11 ¹ / ₁₆ | 24 |

See page No. 119 for List Prices.

List Prices per Square Foot of Radiation

COLUMN RADIATION

| Height, Inches..... | 45" to 38" | 32" | 30" | 26" | 23" | 22" | 20" | 18" | 16" | 14" | 13" |
|---------------------------|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| List prices per sq. ft... | \$1.00 | \$1.10 | \$1.15 | \$1.20 | \$1.26 | \$1.30 | \$1.36 | \$1.40 | \$1.50 | \$1.55 | \$1.60 |

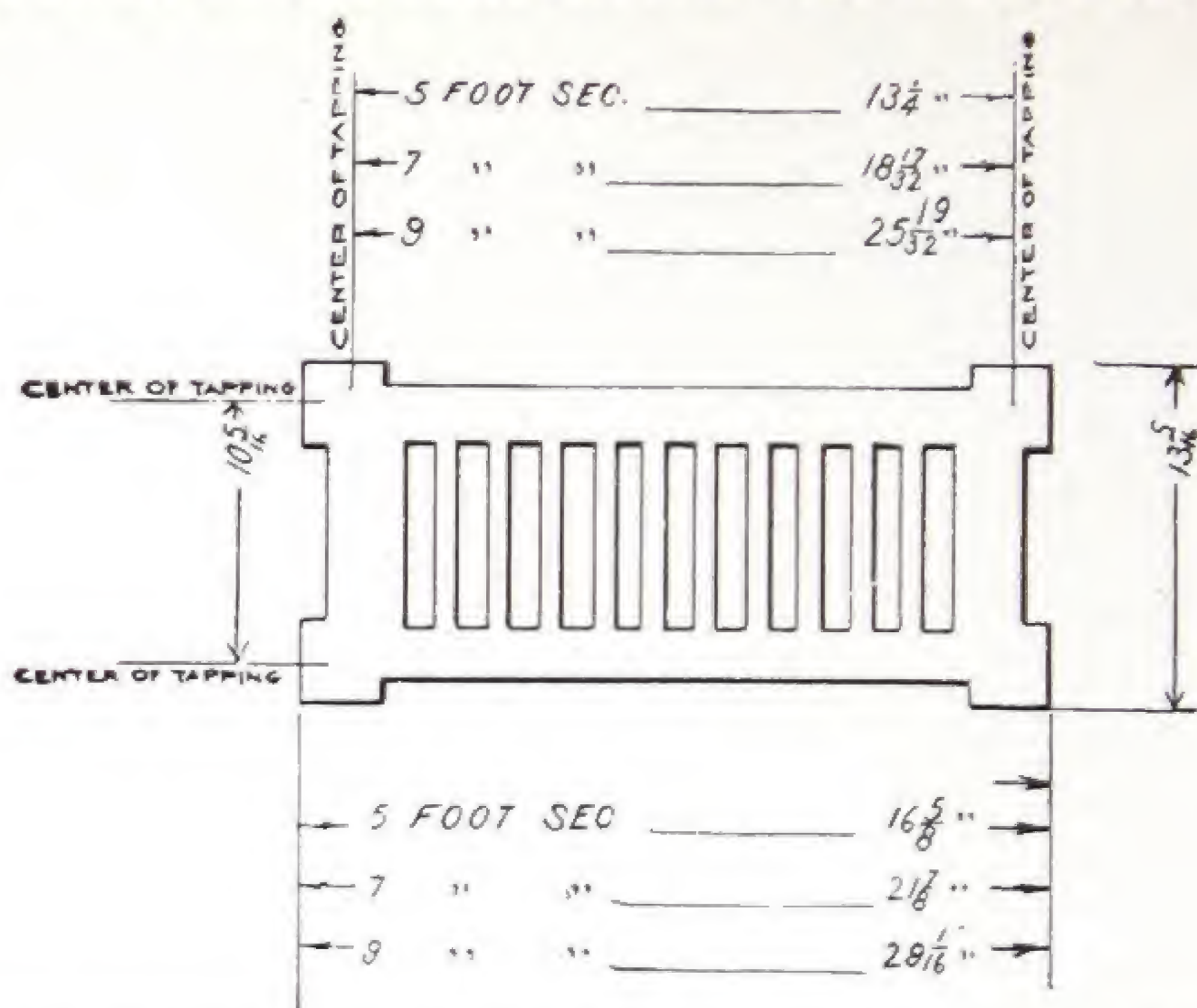
WALL RADIATION

| Size..... | 12 ft. | 9 ft. | 7 ft. | 6 ft. | 5 ft. |
|------------------|--------|--------|--------|--------|--------|
| List prices..... | \$1.05 | \$1.05 | \$1.05 | \$1.10 | \$1.15 |

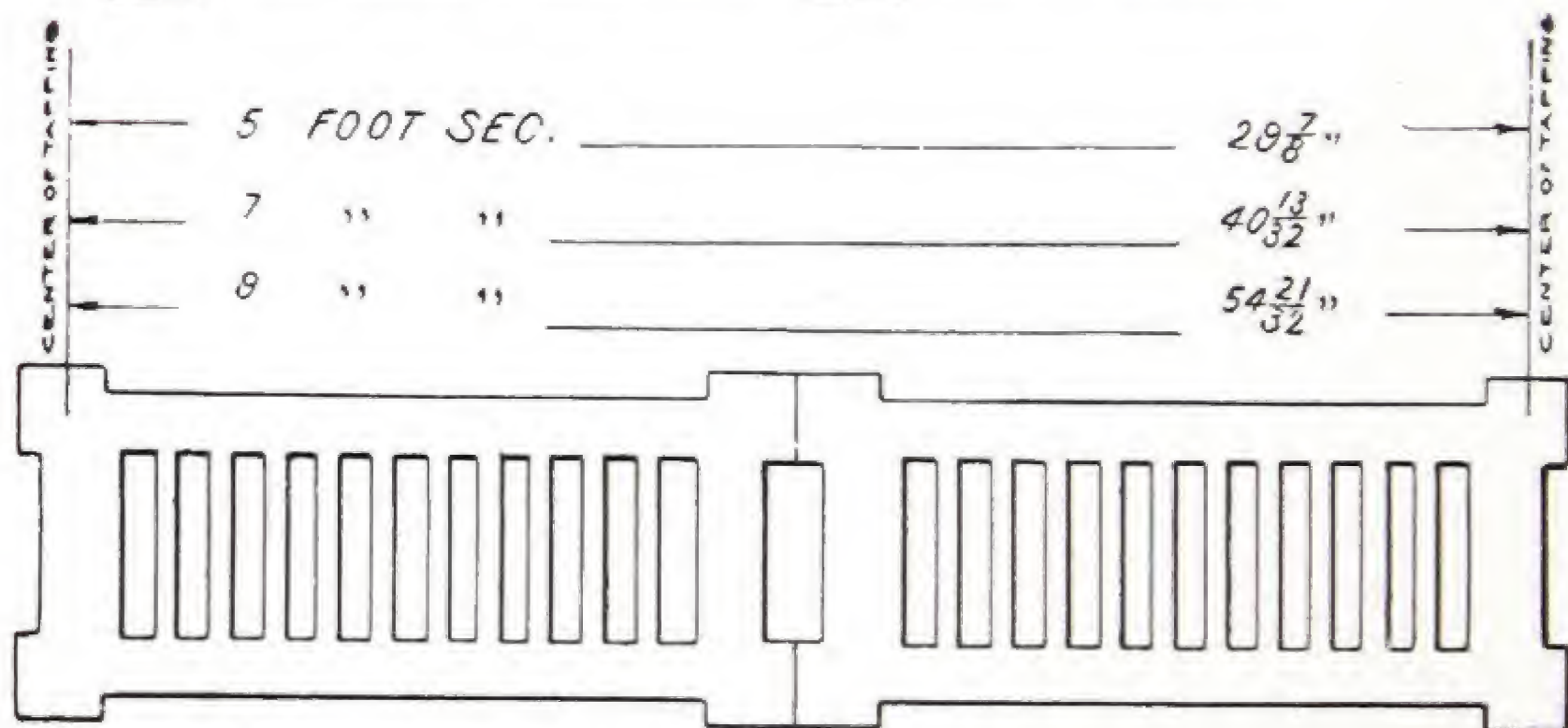
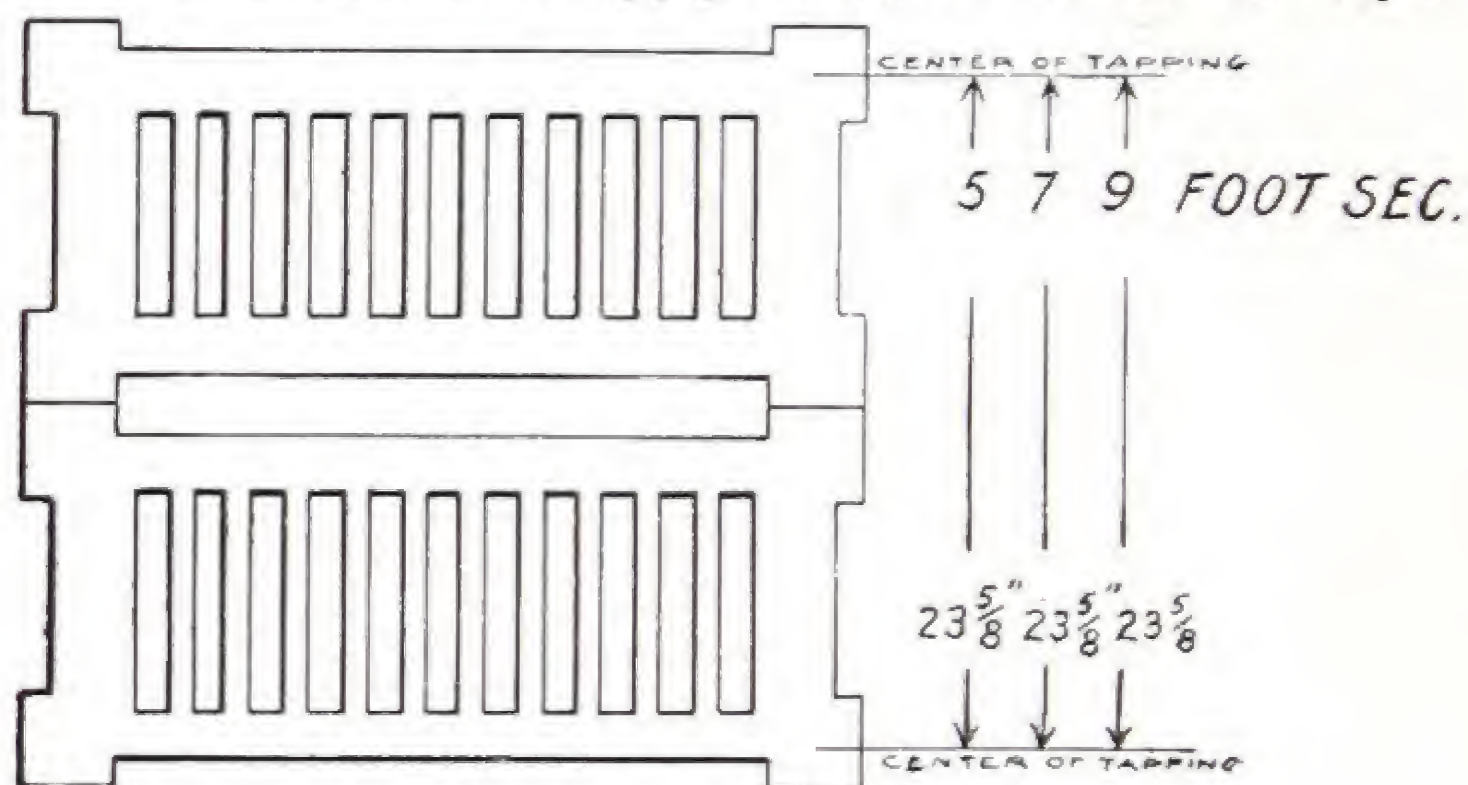
INDIRECT RADIATION

| | | |
|--|------------------|--------------------------|
| Capacity in Square Feet per Section..... | Climax 13 ft. | School Pin 15 and 20 ft. |
| List price per square foot..... | \$1.00 | \$1.00 |

Peerless Wall Radiator Measurements



Above measurements apply to either "A" or "B" styles



NOTE.—The regular tapplings of Peerless Wall Radiators, as shown on the following pages are indicated by Nos. 2, 3, 4, 5, 6, 7, 8, and 9. Nos. 20, 30, 40, 50, 60, 70, 80 and 90 indicate special tapplings which can be furnished if desired and for which an extra charge will be made. Tapplings are $1\frac{1}{2}$ inches, supply and return, and bushed as desired.

Peerless Wall Radiators—Continued

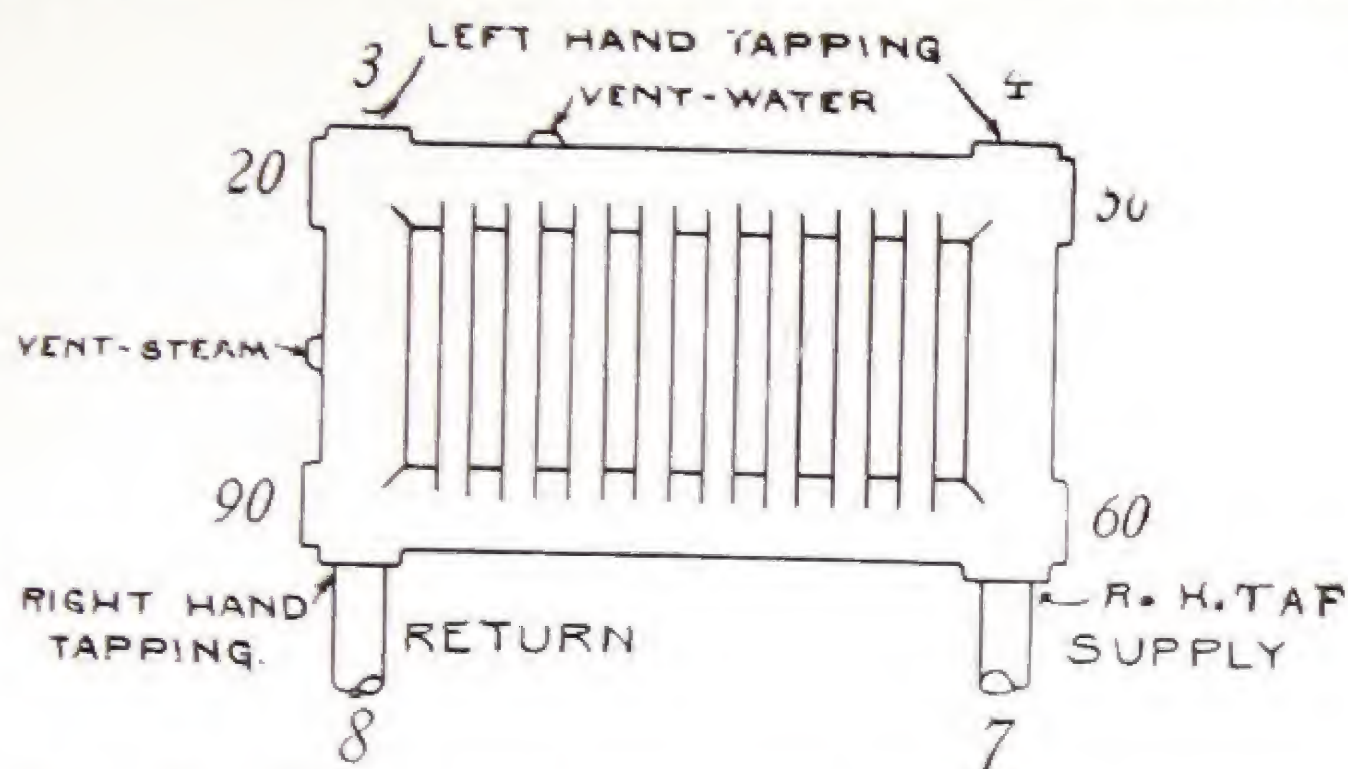


Fig. 1. Water and One- and Two-Pipe Steam

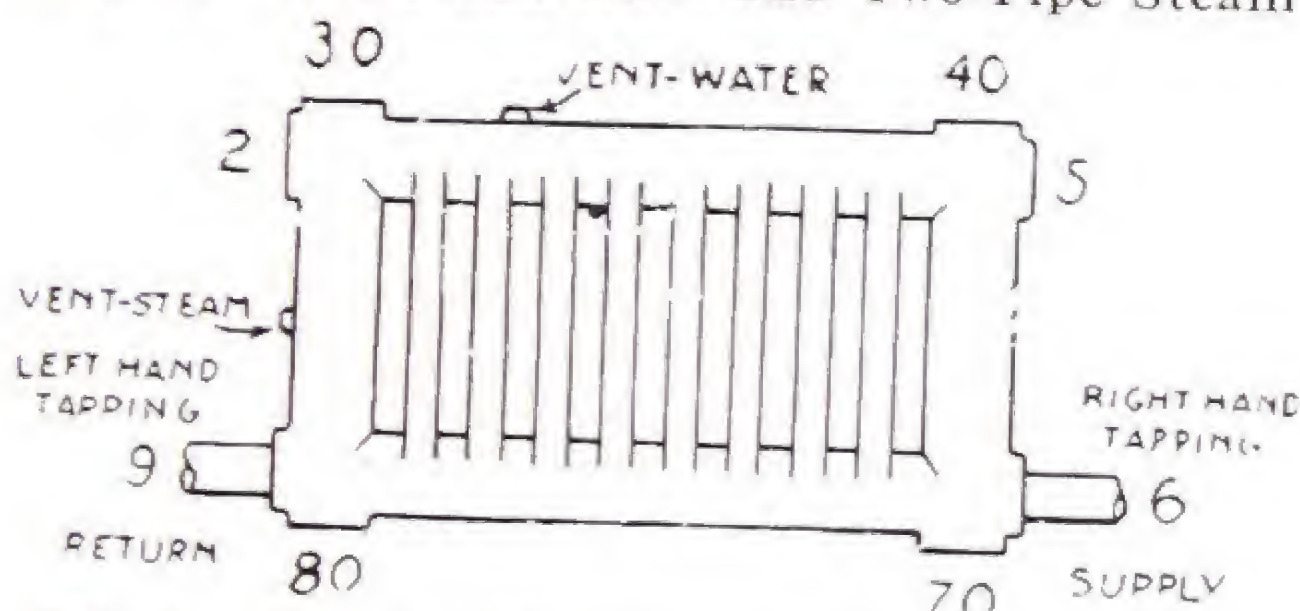


Fig. 7. Water and One- and Two-Pipe Steam

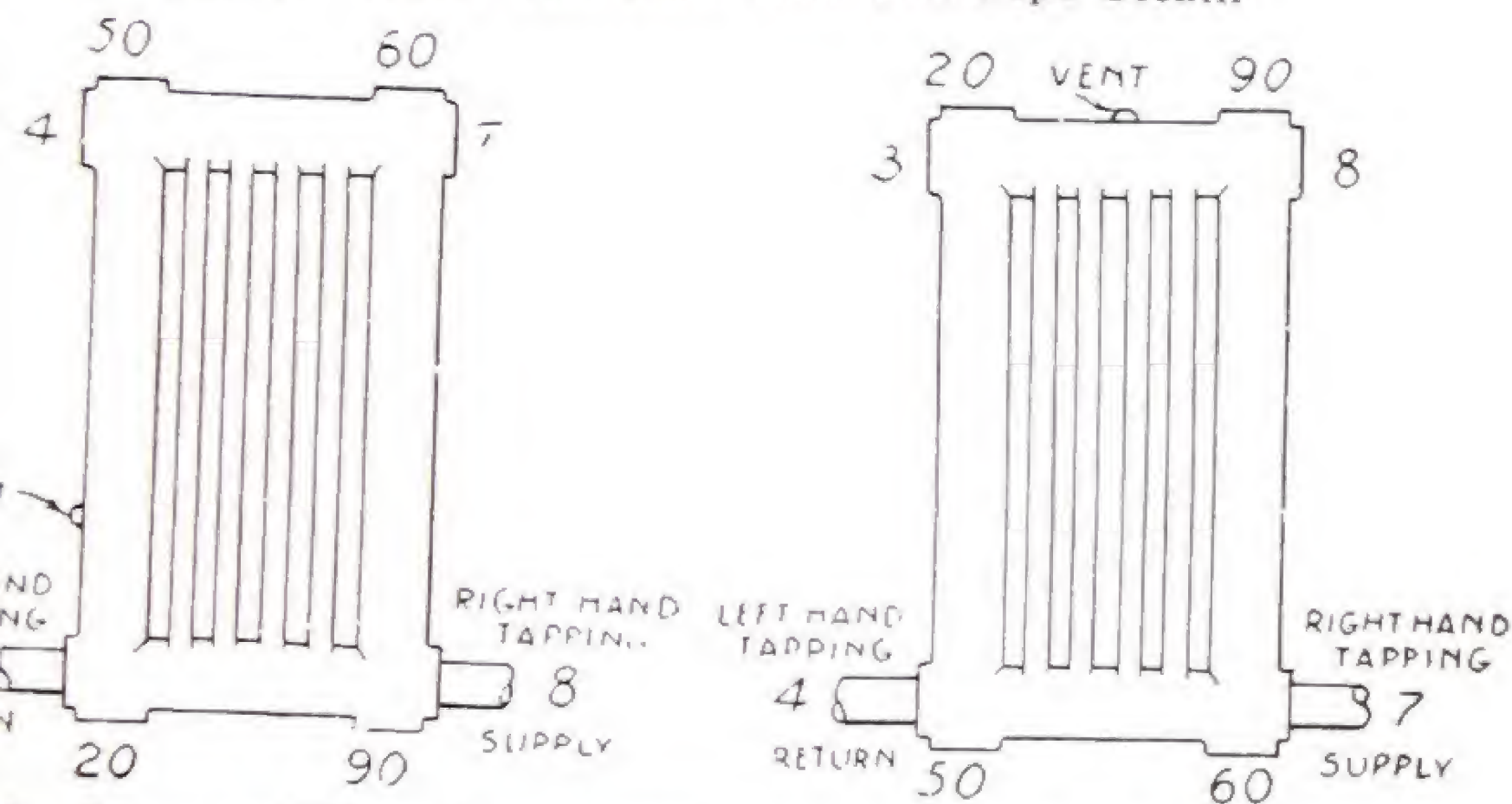


Fig. 4. One- and Two-Pipe Steam

Fig. 8. Water

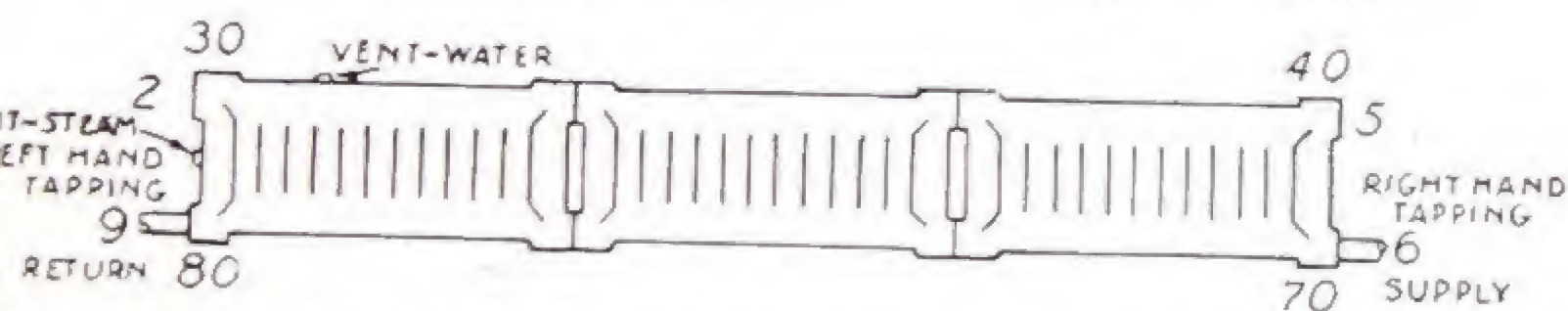


Fig. 11. Assembled Three Sections in Single Tier—Water and One- and Two-Pipe Steam

Peerless Wall Radiators—Continued

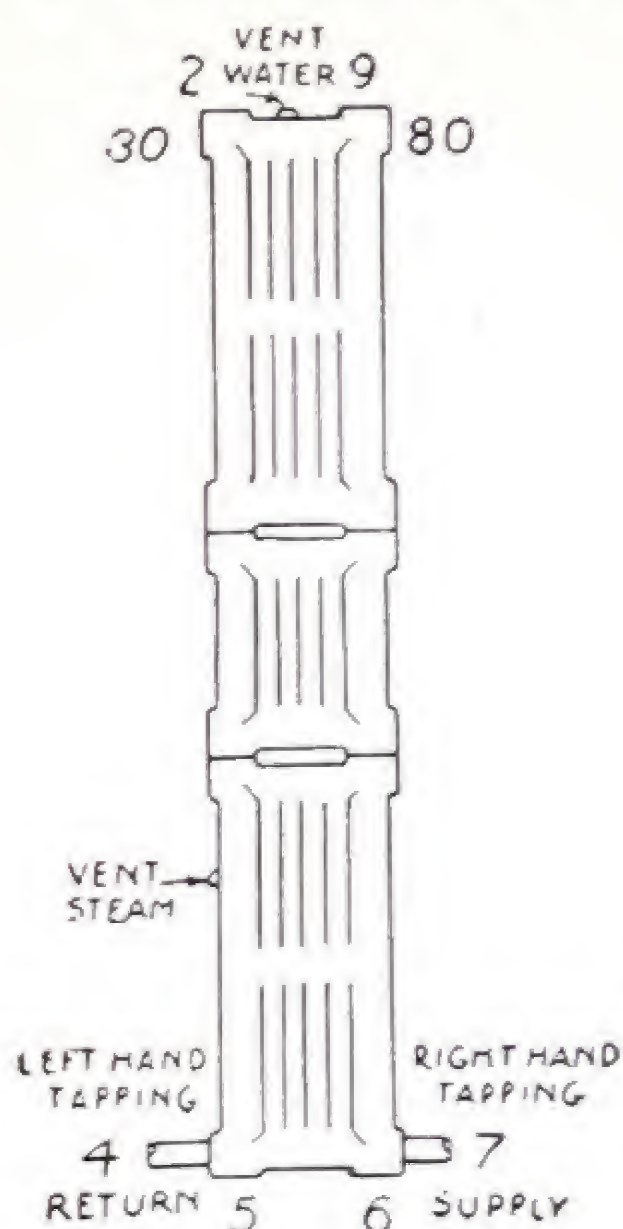


Fig. 13. Three Sections in 3 Tiers—Water and 1- and 2-Pipe Steam

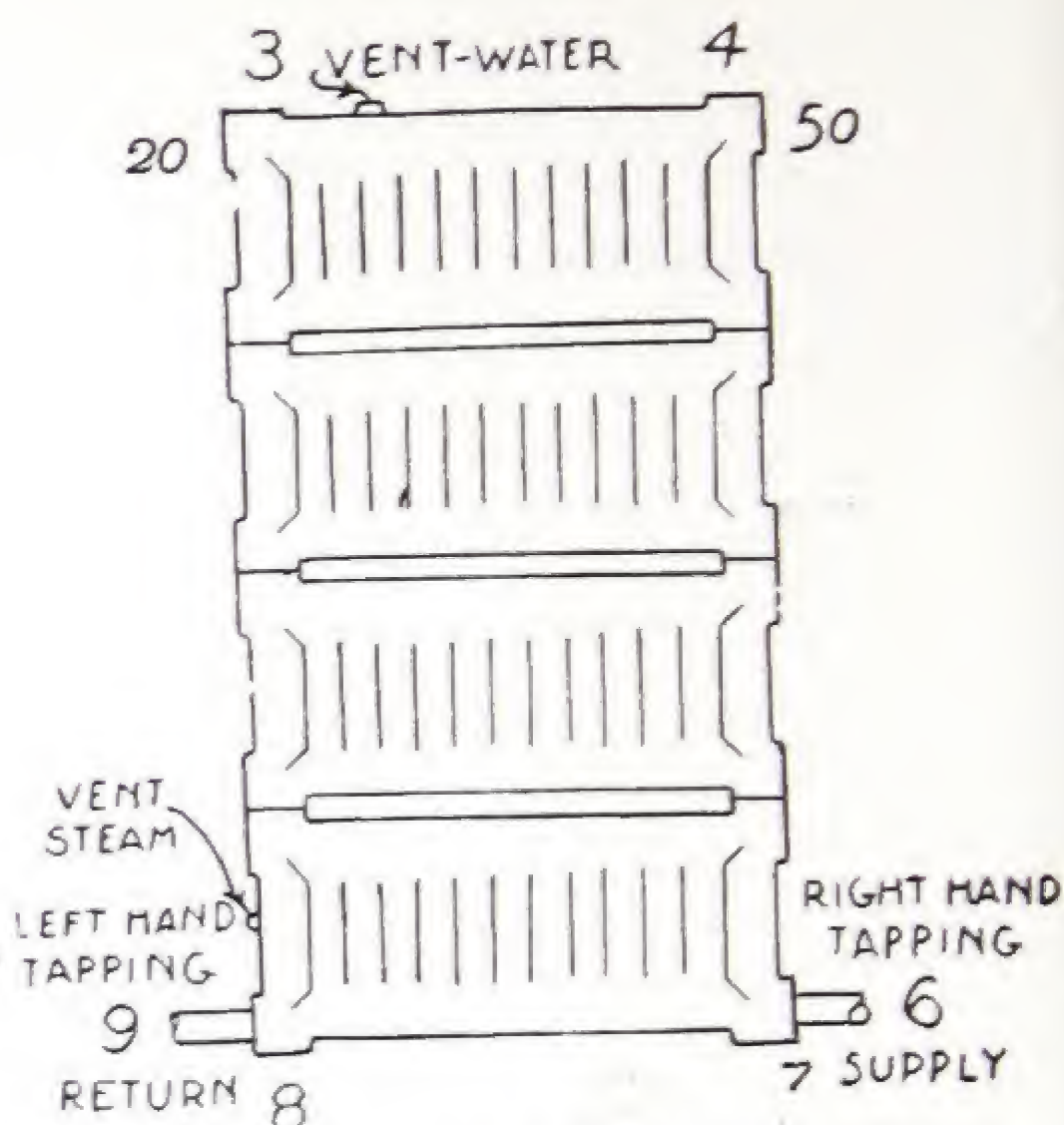


Fig. 15. Assembled Four Sections in Four Tiers—Water and One- and Two-Pipe Steam

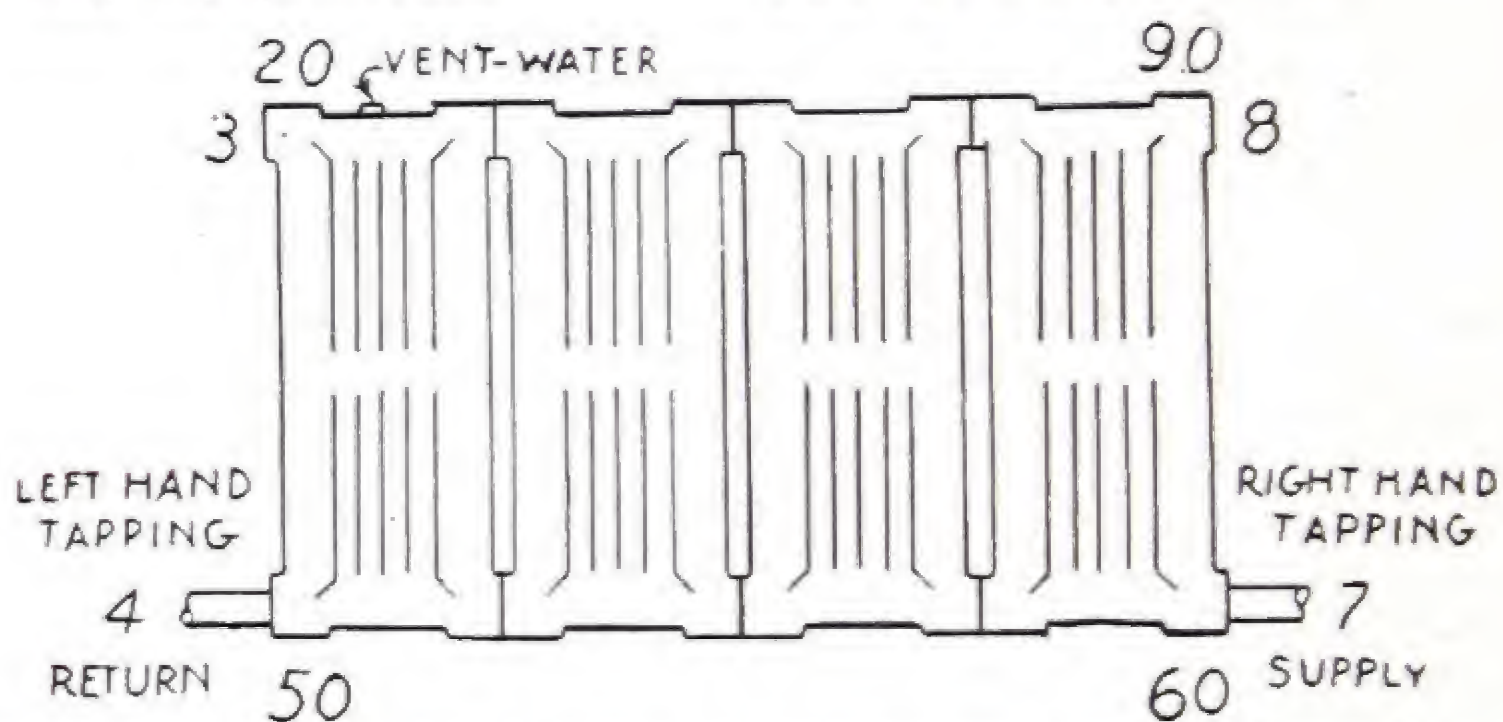


Fig. 17. Assembled Four Sections in Single Tier—Water

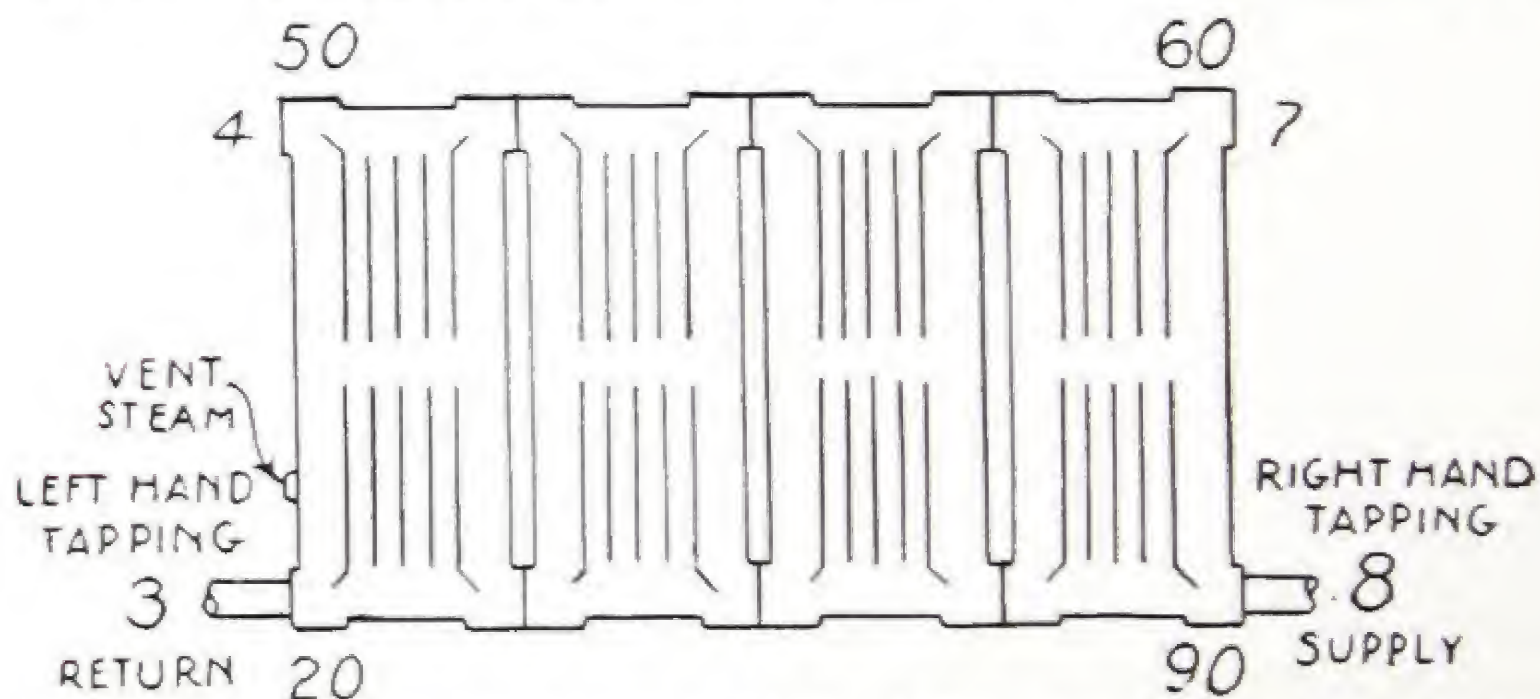


Fig. 18. Sections in Single Tier—One- and Two-Pipe Steam

Peerless Wall Radiators—Continued

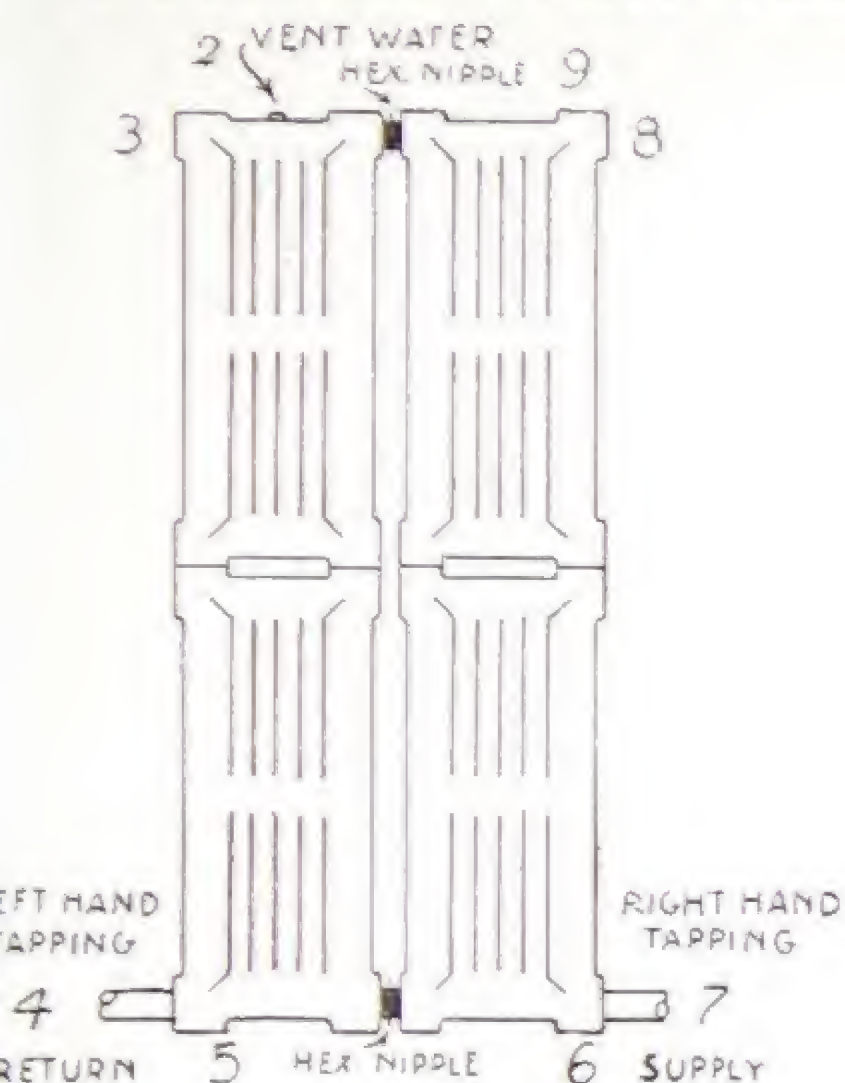


Fig. 19. Assembled Four Sections in Two Tiers—Water

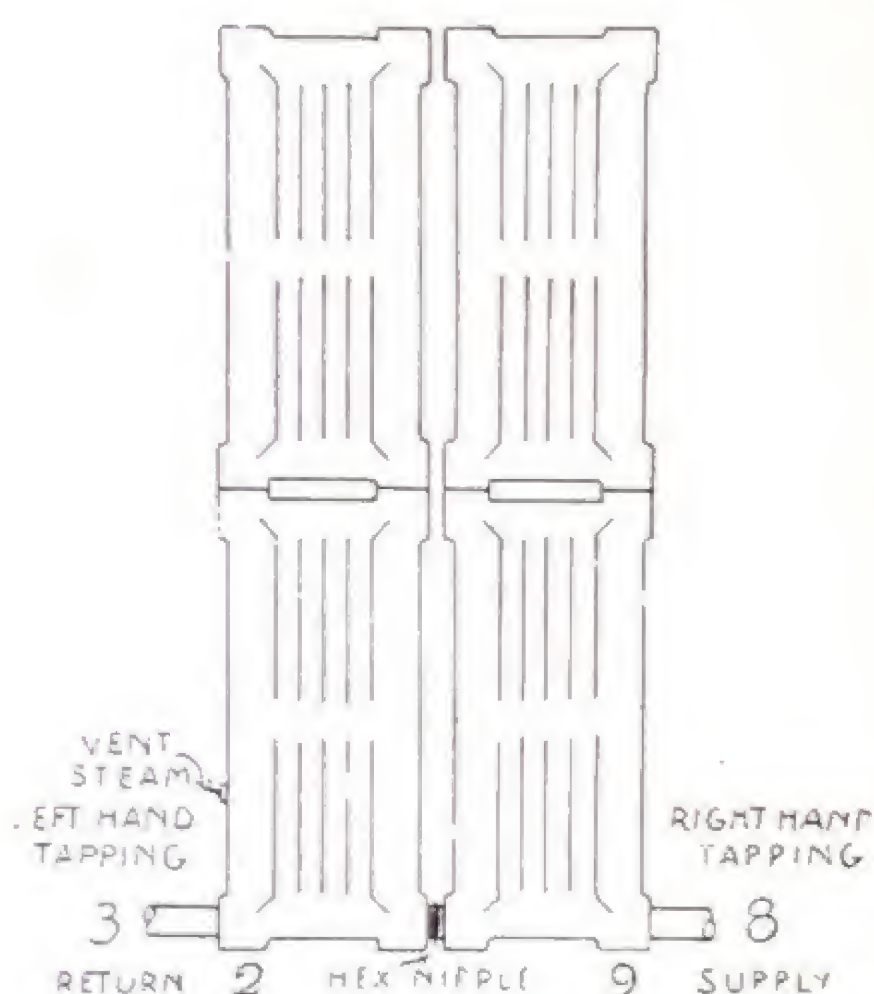


Fig. 20. Assembled Four Sections in Two Tiers—One- and Two-Pipe Steam

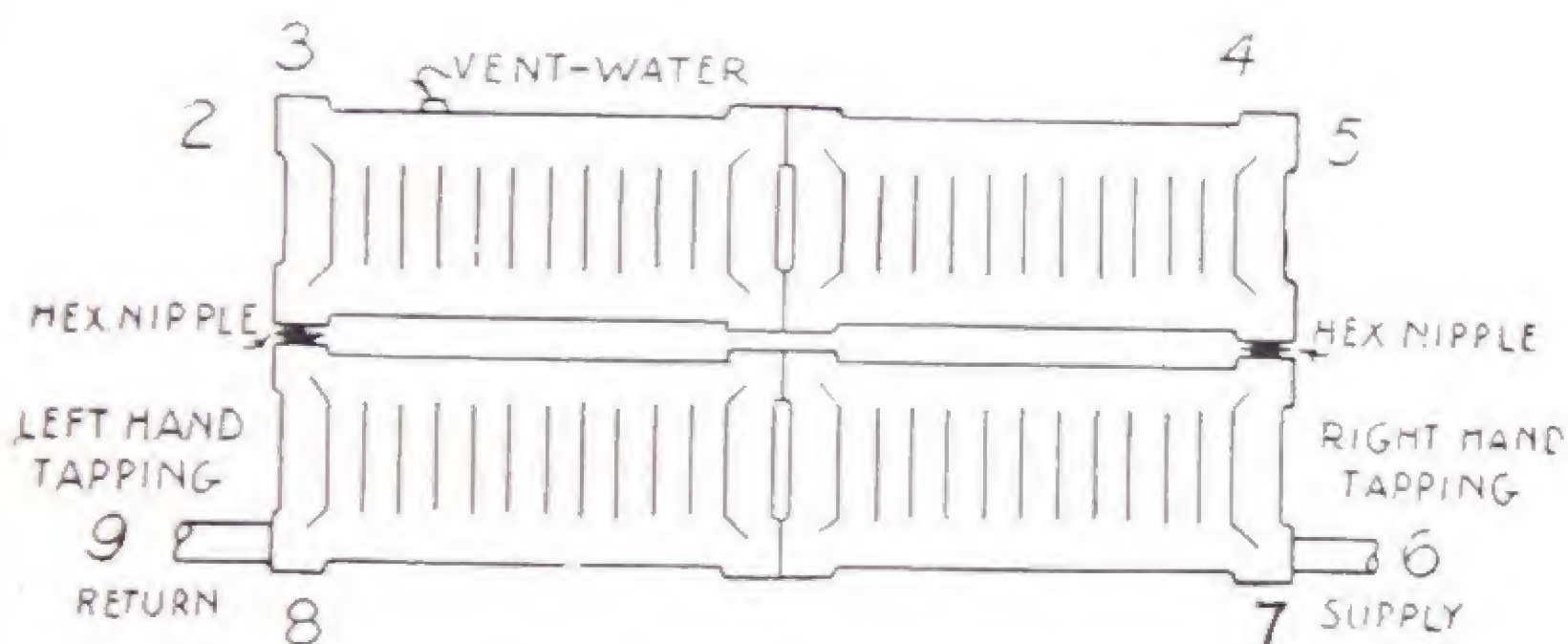


Fig. 21. Assembled Four Sections in Two Tiers—Water

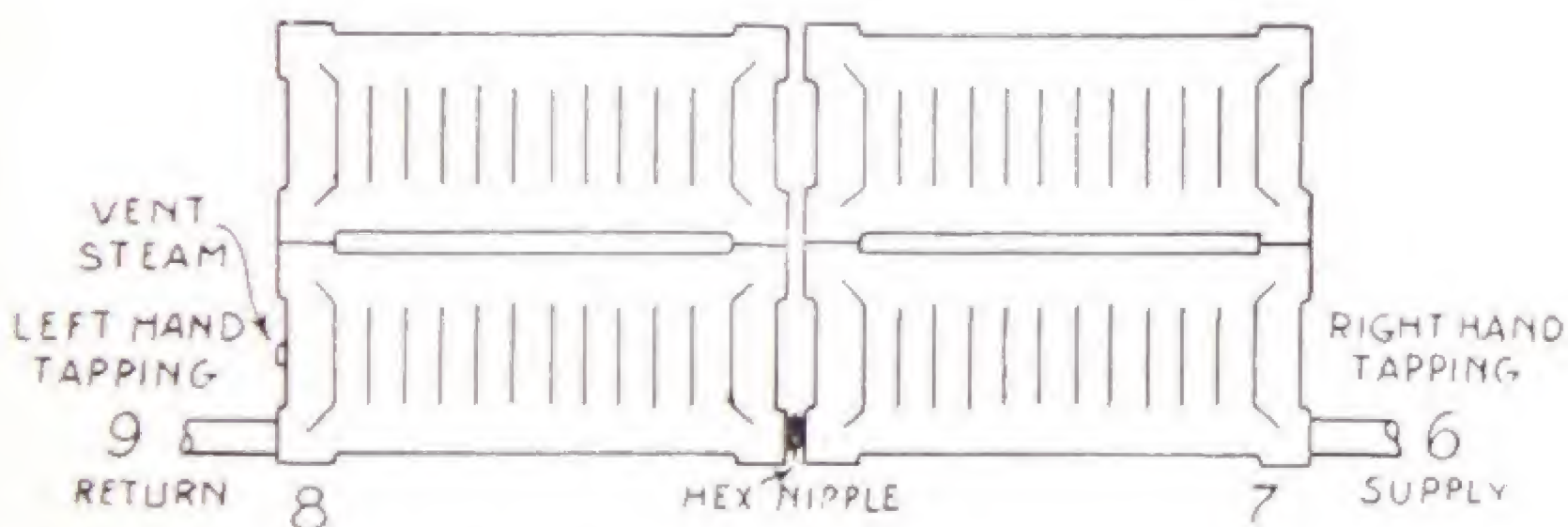


Fig. 22. Assembled Four Sections in Two Tiers—One- and Two-Pipe Steam

Peerless Wall Radiators—Continued

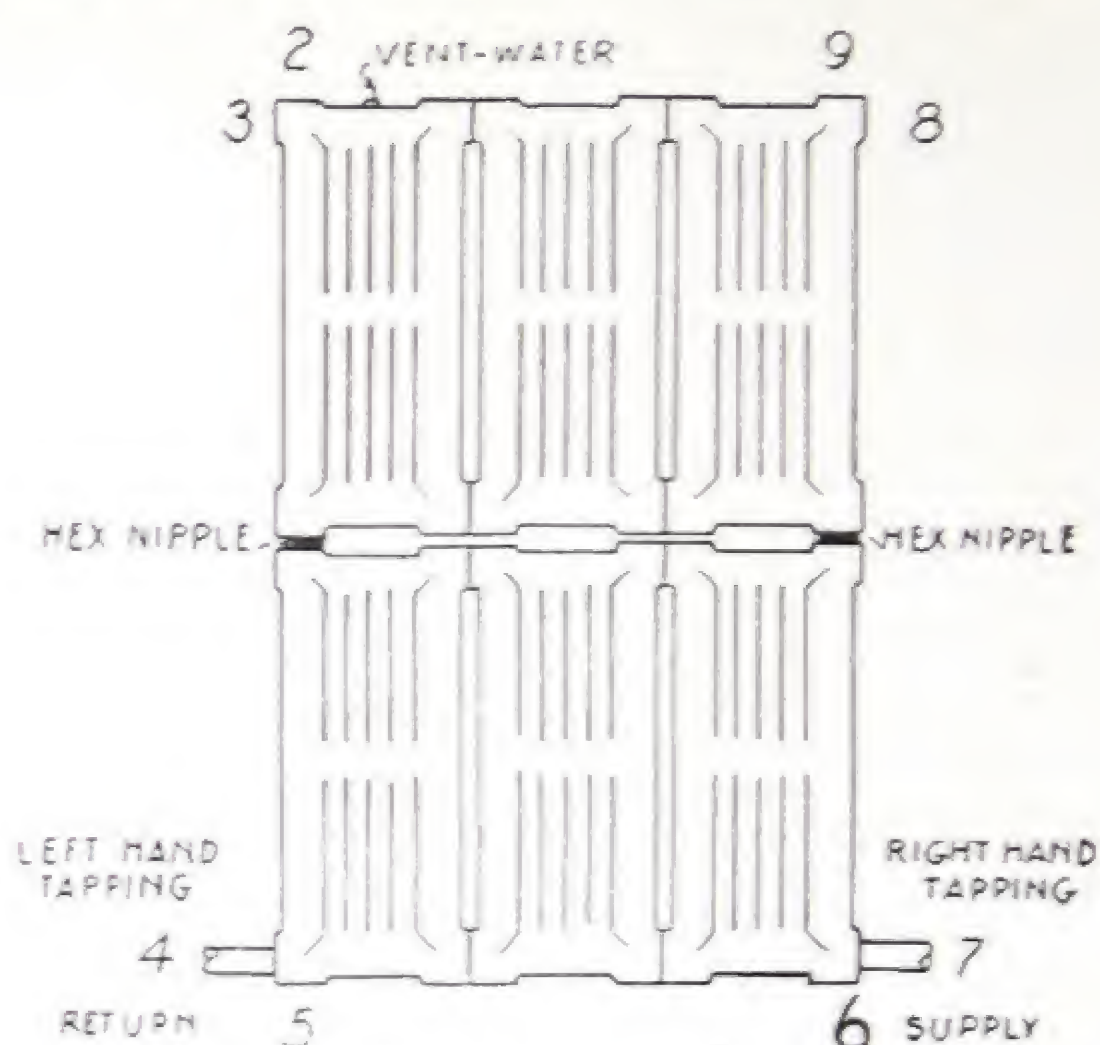


Fig. 25. Assembled Six Sections in Two Tiers—Water

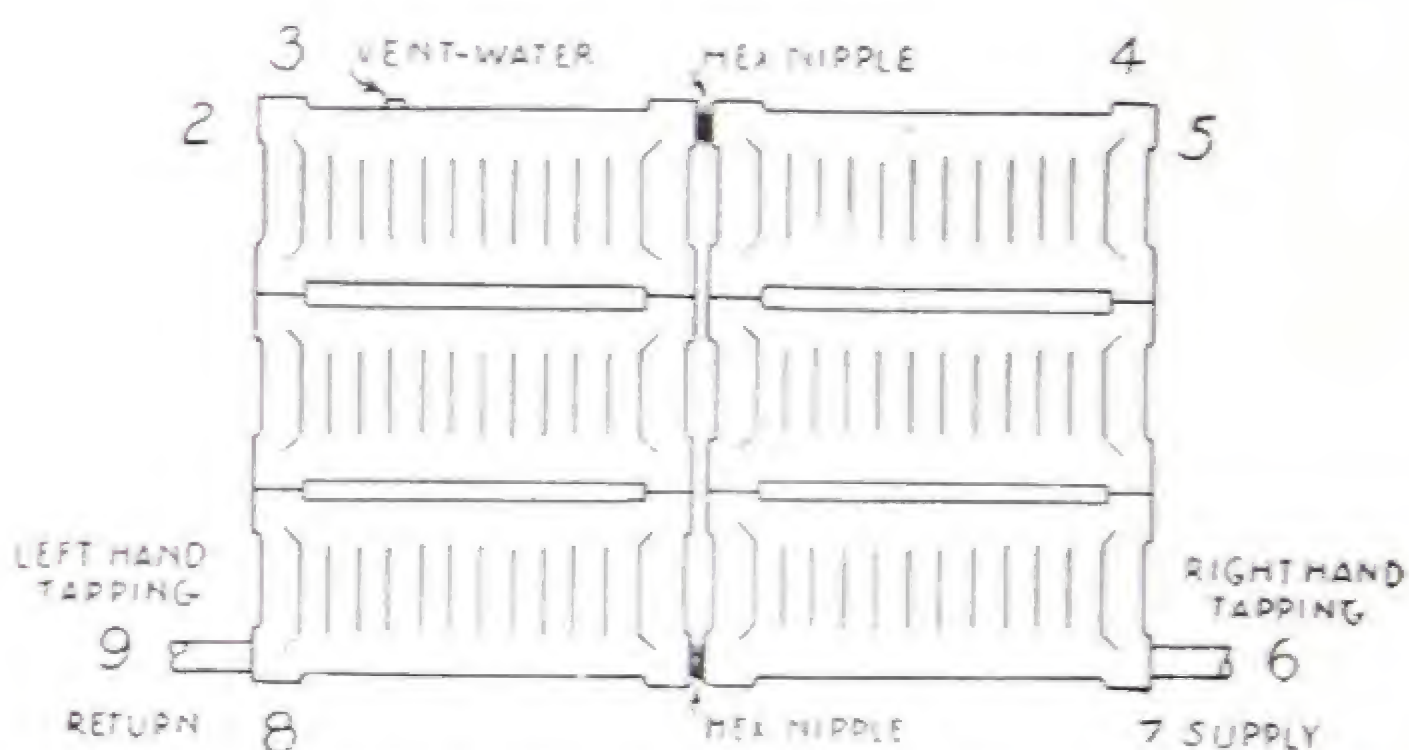


Fig. 27. Assembled Six Sections in Three Tiers—Water

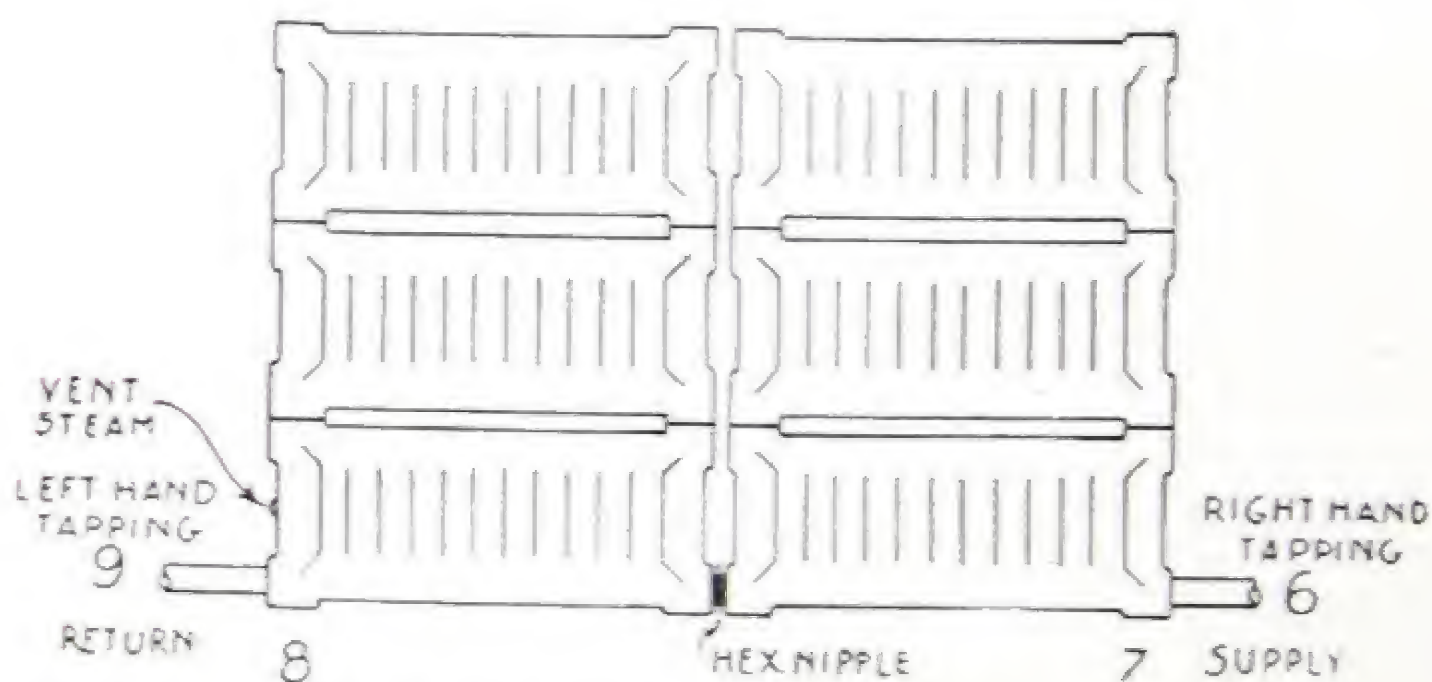


Fig. 28. Assembled Six Sections in Three Tiers—One- and Two-Pipe Steam

Peerless Wall Radiators—Continued

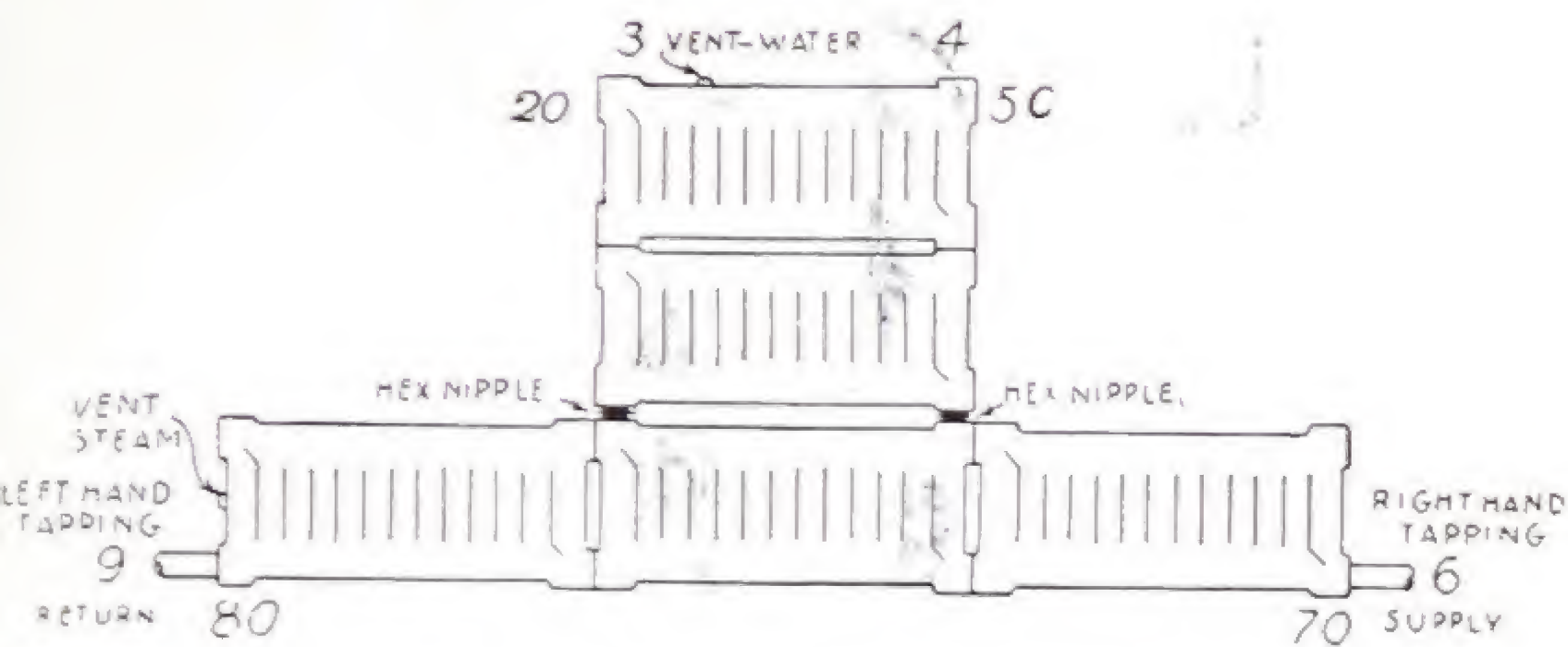


Fig. 23. Assembled Three and Two Sections with Three Tiers in Centre—Water and One- and Two-Pipe Steam

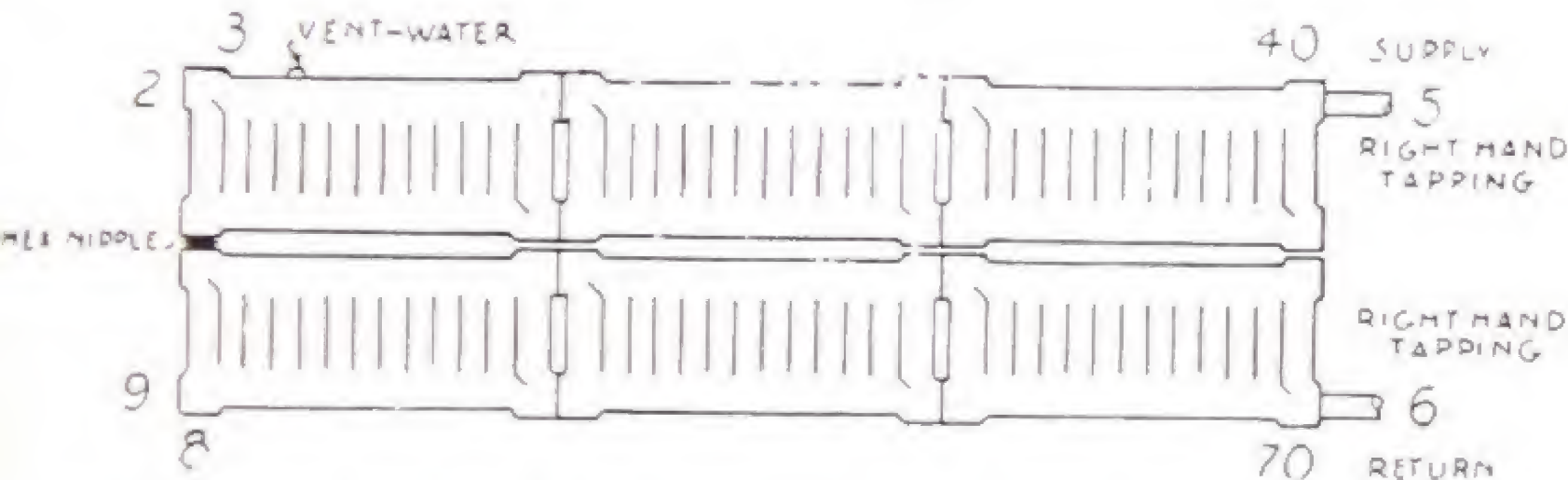


Fig. 31. Assembled Six Sections in Two Tiers—Water

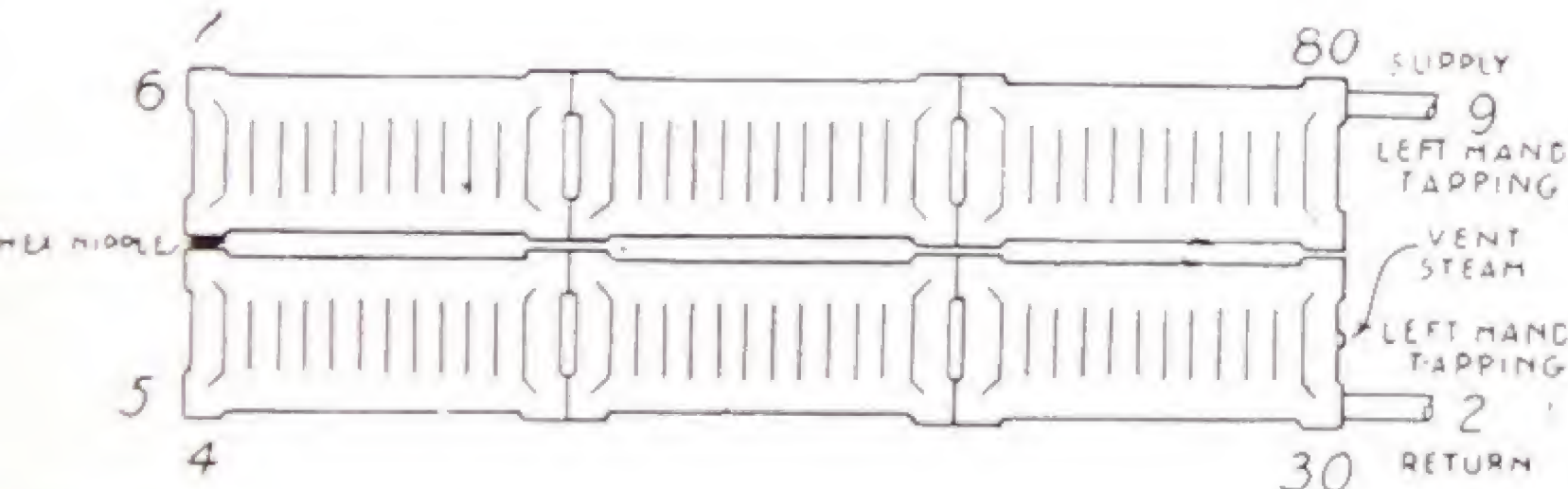
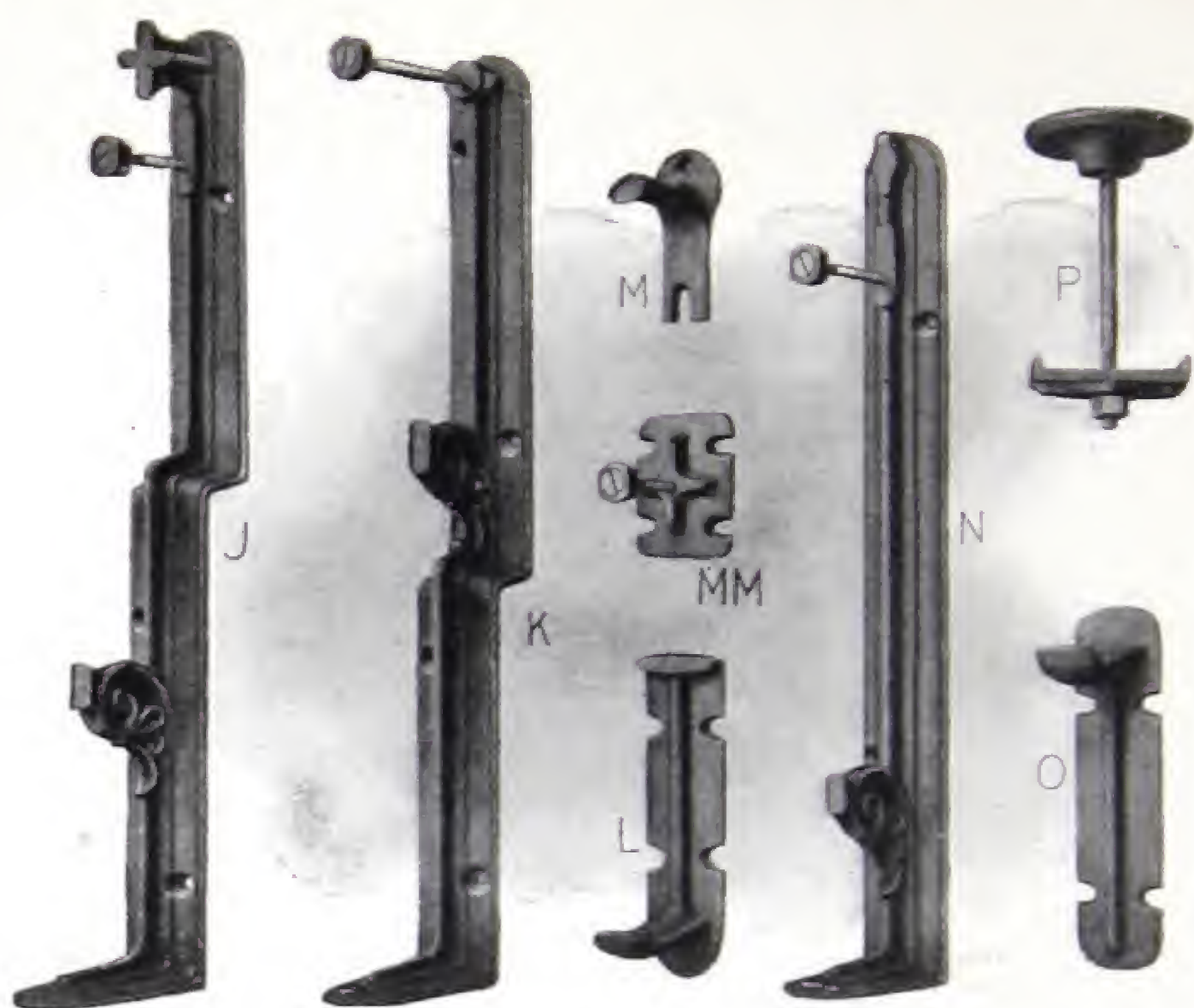


Fig. 32. Assembled Six Sections in Two Tiers—Two-Pipe Steam

Peerless Wall Radiator Brackets



Brackets "J": To fit over a $9\frac{1}{2}$ -inch high baseboard or skirting, and for supporting Wall Radiators Nos. 7-B and 9-B. With each "J" Bracket we furnish one $\frac{1}{4}$ -inch stove-bolt and one button.

Height from floor to centre of lowest tapping (supply or return):—
 J-1 Bracket..... $9\frac{1}{2}$ inches.....List \$1.25
 J-2 Bracket..... $7\frac{1}{2}$ "....." 1.25
 J-3 Bracket..... $5\frac{1}{2}$ "....." 1.25

Brackets "K": To fit over baseboard or skirting, and for supporting Wall Radiators Nos. 7-A and 9-A. With each "K" Bracket we furnish one $\frac{1}{4}$ -inch stove-bolt and one button. Height from floor to centre of lowest tapping (supply or return):—

| | | | | Inches | List |
|----------------------------|--|----|--------|--------|------|
| K-1 Bracket (will fit over | $11\frac{1}{2}$ -inch high baseboard.... | 16 | \$1.25 | | |
| K-2 Bracket | " " " $9\frac{1}{2}$ " " " | 14 | 1.25 | | |
| K-3 Bracket | " " " $7\frac{1}{2}$ " " " | 12 | 1.25 | | |
| K-4 Bracket | " " " $5\frac{1}{2}$ " " " | 10 | 1.25 | | |
| K-5 Bracket | " " " $3\frac{1}{2}$ " " " | 8 | 1.25 | | |
| K-6 Bracket | " " " $1\frac{1}{2}$ " " " | 6 | 1.25 | | |

Brackets "L", "O", "MM" and "M": Screwed to wall, baseboard or wainscoting. "L" and "O" Brackets are bottom supports for all sizes of Wall Radiators. "MM" and "M" Brackets are top guides to hold radiator in place. "L" and "MM" Brackets are concealed, "O" and "M" Brackets are not. One "MM" or "M" Bracket should always be provided for use with each "L" or "O" Bracket. "L", "O" and "MM" Brackets are slotted for four and the "M" Bracket for two wood screws—not furnished by us. With each "MM" Bracket we furnish one $\frac{1}{4}$ -inch stove-bolt and one button.

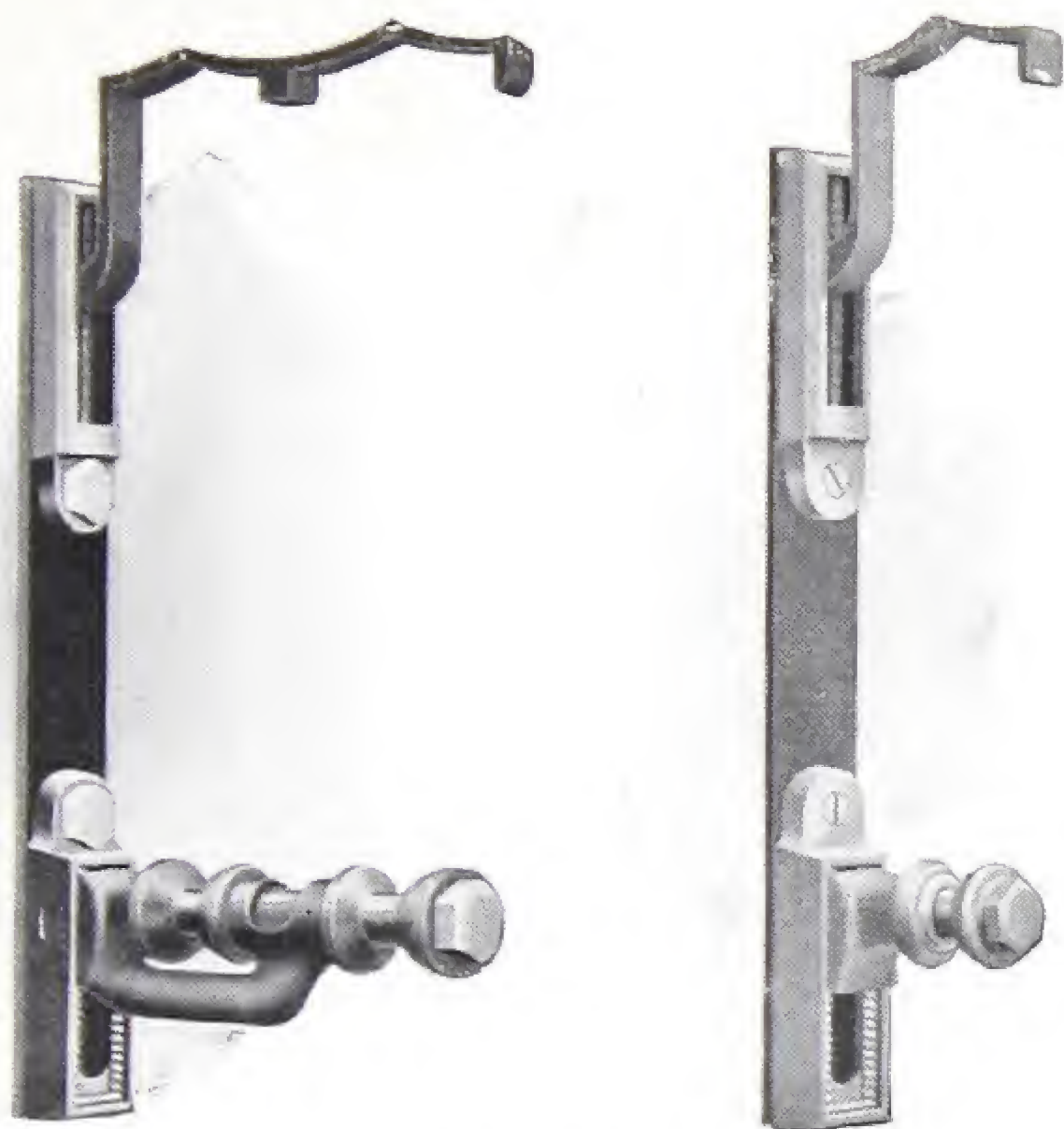
| | |
|----------------|---------------------|
| L Bracket..... | List Price 18c each |
| M "..... | " " 18c " |
| MM "..... | " " 18c " |
| O "..... | " " 18c " |

Bracket "N" is a straight right-angle Bracket, without offset, for supporting all sizes of Wall Radiators: height from floor to centre of end tapping bosses, $5\frac{1}{2}$ inches. With each "N" Bracket we furnish one $\frac{1}{4}$ -inch stove-bolt and one button.

| | |
|----------------|---------------------|
| N Bracket..... | List Price 55c each |
|----------------|---------------------|

Arco Adjustable Wall Brackets

(Patented)



Made for all runs of wall radiators in factories, warehouses, theatres, railroad stations and other buildings, garages, schools, churches, residences—any building in which floor space is valuable and wall space available.

Brackets are made in one style only and with suitable bearing plates can be screwed to the wall to accommodate any possible assemblage of wall radiators.

By use of these brackets, which permit vertical adjustment of 2 inches, the fitter can adjust for "pitch" after they have been attached to the wall. The brackets set the outer face of the radiator $4\frac{3}{4}$ inches from the wall.

The spools on the bottom bracket allow a free horizontal movement of the radiators, thus taking care of any difference in "roughing in" measurements, and afford free-play for expansion and contraction. The V-shape formed by the divided spool makes it impossible for the radiator to jump from the bracket.

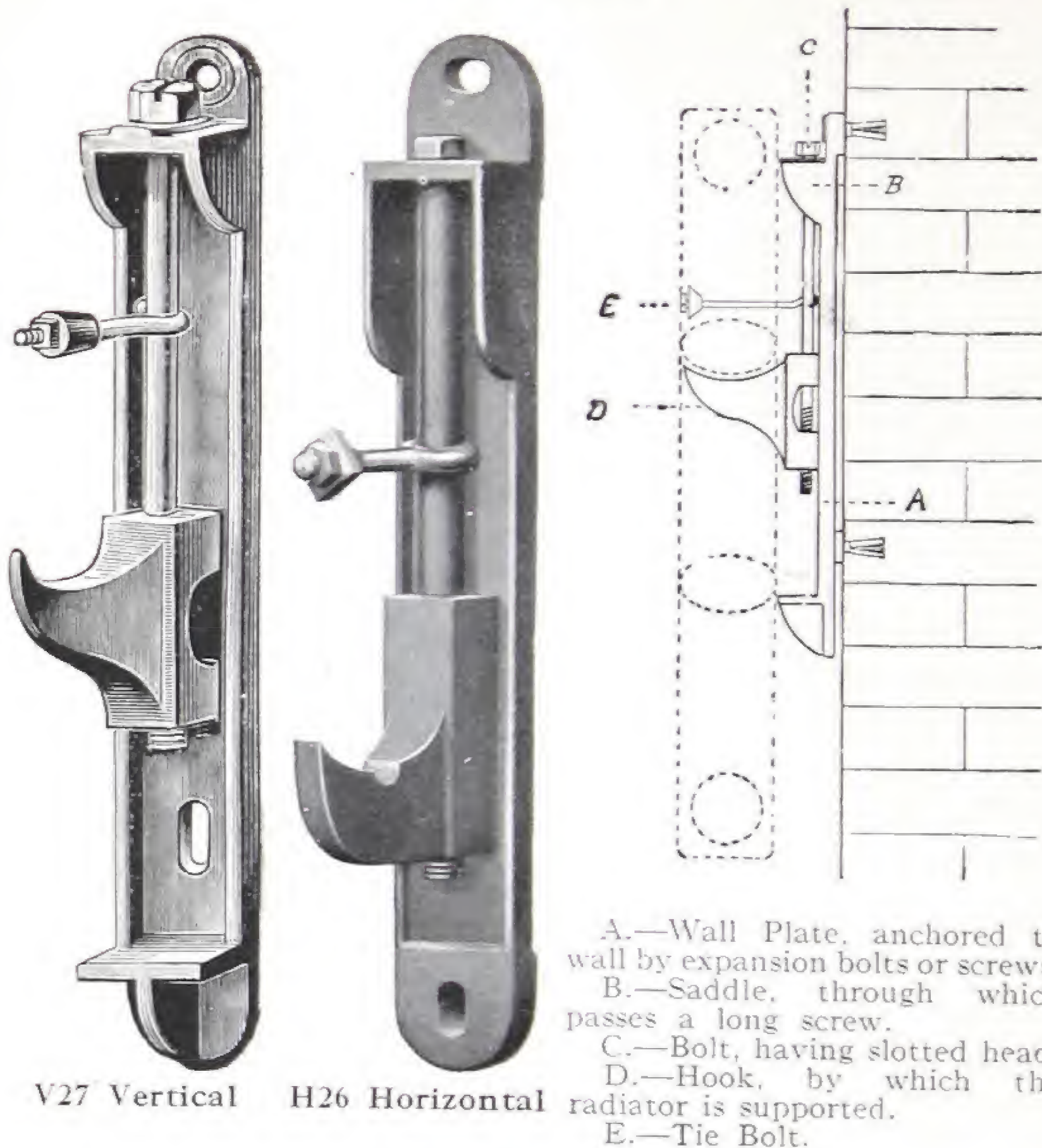
The finger of the top bracket is set at its highest point and then screwed down to the radiator, merely guiding it and keeping it from tipping forward.

If heating contractor desires to furnish his own wrought iron bearing plates orders should so state, and measurements for holes to fasten the two brackets will be sent.

List Price, \$2.40 each.

Latest Improved Suspension Adjustable Safford Wall Radiator Brackets

Patented 1916



V27 Vertical

H26 Horizontal

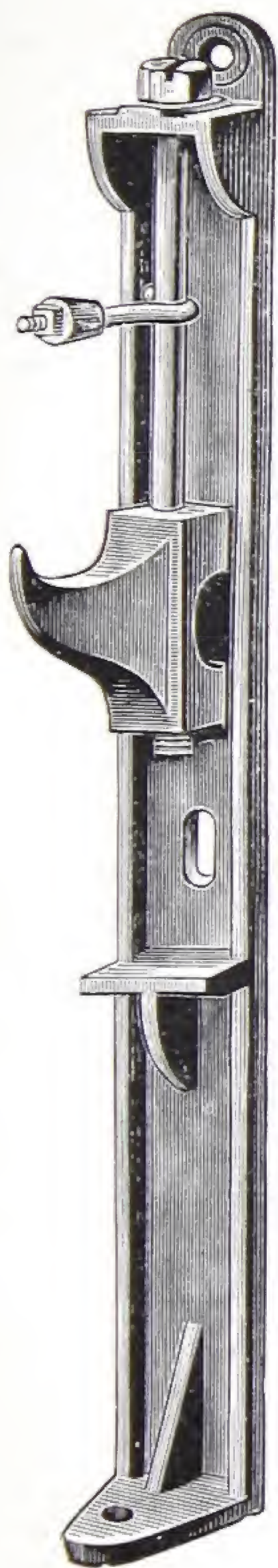
A.—Wall Plate, anchored to wall by expansion bolts or screws.
B.—Saddle, through which passes a long screw.
C.—Bolt, having slotted head.
D.—Hook, by which the radiator is supported.
E.—Tie Bolt.

These Brackets are the result of many years' experience; they may be attached to a brick, concrete or any other wall. They hold the radiator securely, and provide for all expansion and contraction. Being adjustable, they are easily raised or lowered by means of a screw bolt, before or after the radiator is in place. The range of adjustment is 3 inches up or down.

The recommended location of the locknut is midway of the thread on long bolt, from which point the radiator may be raised or lowered $1\frac{1}{2}$ inches.

For list price, see page 131.

No. H or V 28 Duck-Foot Suspension Safford Wall Bracket



Horizontal or Vertical

Patent 1916

This support has the same features of adjustment and allowance for expansion and contraction as the No. V 27 Wall Suspension Bracket, but is provided with an extension to rest on floor.

Has no offset for baseboard.

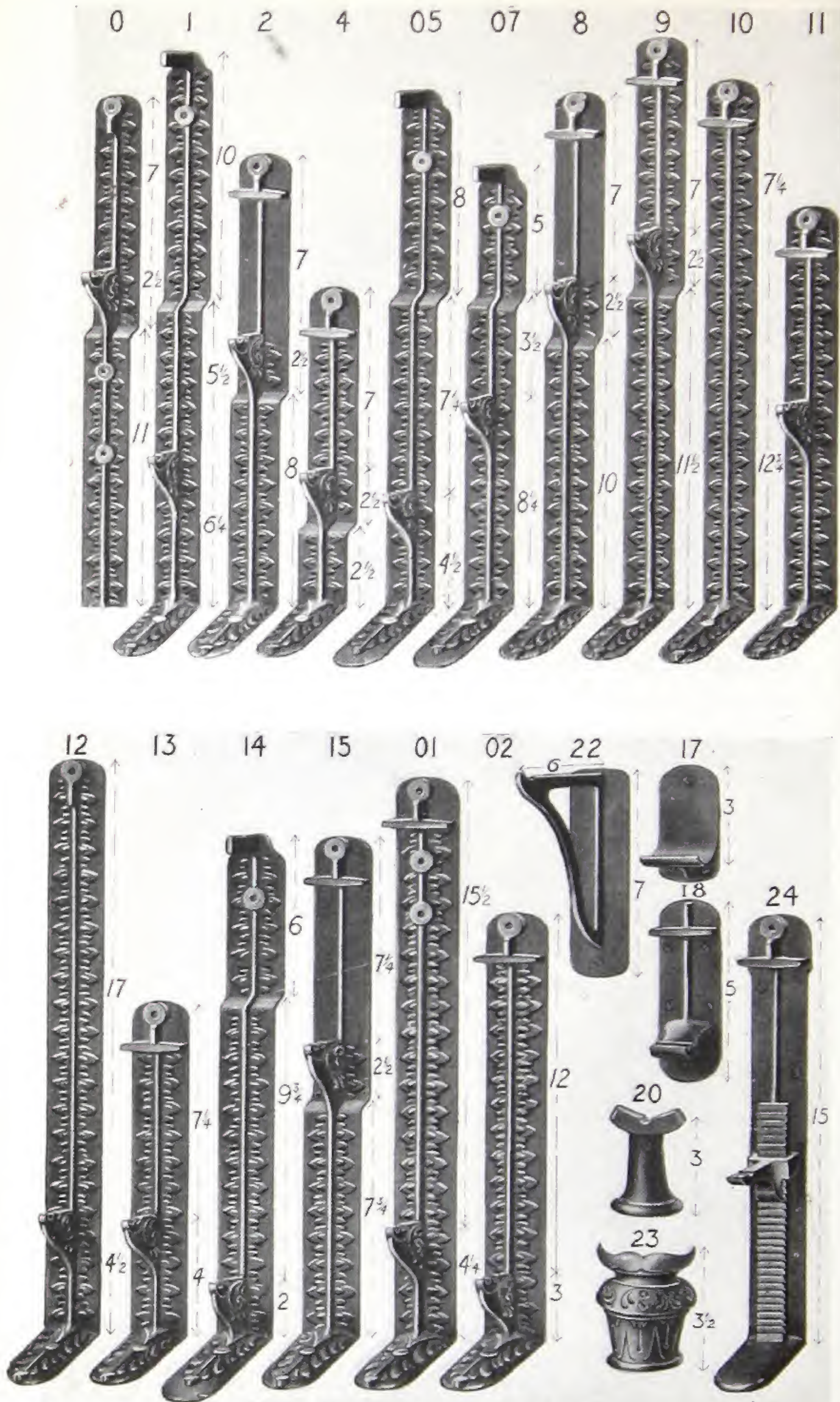
Height of centre of tapping from the floor $8\frac{3}{4}$ inches.

Regularly furnished with one screw hole at top to secure bracket to wall, and one through foot to secure to floor.

When ordering the No. V 27 Suspension Wall Bracket, or the No. H or V 28 Duck-Foot Suspension Bracket separately, state whether for Vertical or Horizontal Radiators; also size of section.

For list price, see page 131.

Safford Radiator Wall Brackets



No. 24 Adjustable Bracket (Patented) can be adjusted to any height above floor from 3 to 9 inches. For list price, see page 131.

List Price Safford Wall Radiator Brackets

F.O.B. Toronto, Ont.

No. or Style

| | | | | | | | | | | | | | |
|---|--------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Nos..... | 0 | 1 | 2 | 4 | 05 | 07 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| Price, each | \$0.50 | .50 | .45 | .40 | .50 | .45 | .50 | .50 | .50 | .45 | .50 | .40 | .40 |
| Nos..... | 15 | 01 | 02 | 22 | 20 | 17 | 18 | 23 | 24 | 31 | 30 | 32 | 33 |
| Price, each | \$0.45 | .50 | .45 | .20 | .20 | .08 | .10 | .30 | .60 | .28 | .50 | .60 | .56 |
| Concealed Brackets, each..... | List 50 cts. | | | | | | | | | | | | |
| 12-foot Wall, Top, each..... | List 50 cts. | | | | | | | | | | | | |
| 12-foot Wall, Bottom, each..... | List \$1.00 | | | | | | | | | | | | |
| Wrought Iron Hangers, each..... | List 60 cts. | | | | | | | | | | | | |
| Wall Radiator Buttons (No Screws), each..... | List 06 cts | | | | | | | | | | | | |
| Wall Radiator Buttons with 5-in. Wood Screws, each..... | List 20 cts. | | | | | | | | | | | | |

Latest Improved Suspension Adjustable Safford Wall Radiator Brackets

F.O.B. Toronto, Ont.

For 6, 7 and 9 foot Ontario Sections

| No. | List Price |
|--|------------|
| 1.26 Horizontal, Bottom Hook..... | \$2.00 |
| 1.34 Horizontal, Bottom Hook with Duck Foot..... | 3.00 |
| 1.27 Vertical, Centre Hook..... | 2.00 |
| 1.28 Vertical, Centre Hook with Duck Foot..... | 3.00 |
| 1.35 Vertical, Bottom Hook..... | 2.50 |
| 1.36 Vertical, Bottom Hook with Duck Foot..... | 3.00 |

For 7 and 9 foot Standard Sections.

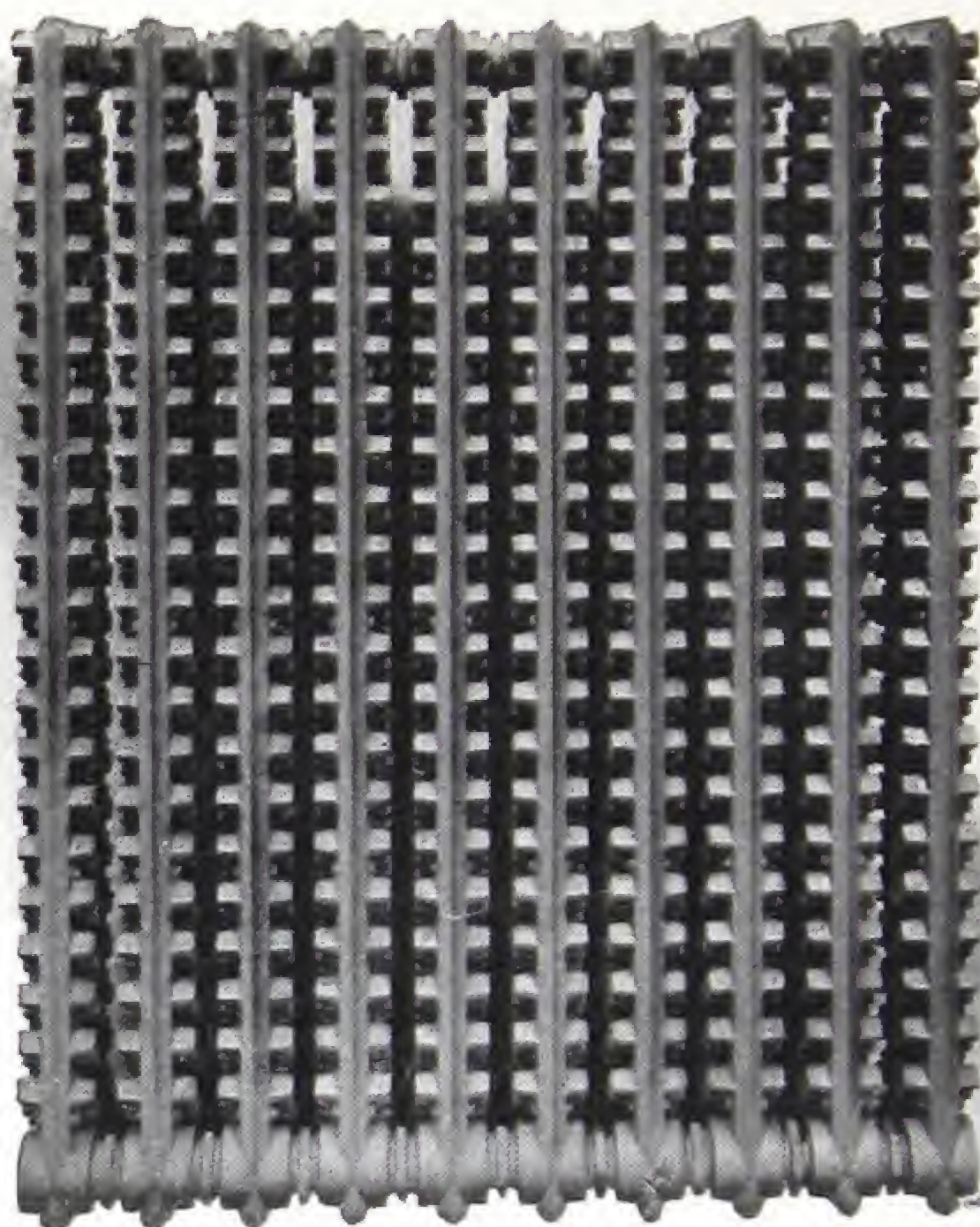
| | |
|--|--------|
| 1.37 Horizontal, Bottom Hook | \$2.00 |
| 1.38 Horizontal, Bottom Hook with Duck Foot..... | 3.00 |
| 1.39 Vertical, Bottom Hook..... | 2.50 |
| 1.40 Vertical, Bottom Hook with Duck Foot..... | 3.00 |

For 12 Foot Sections.

| | |
|--|--------|
| 1.41 Horizontal, Bottom Hook..... | \$3.00 |
| 1.42 Vertical, Centre Hook..... | 3.00 |
| 1.29 Vertical, Bottom Hook..... | 3.50 |
| 1.43 Vertical, Bottom Hook with Duck Foot..... | 4.00 |
| 1.44 Vertical, Bottom Hook with extra long Duck Foot, .. | 4.50 |

Veno Cast-Iron Heaters

For Fan and Blower Work



Front View of Ten-Section Stack

Made for Steam or Water, in 30-, 40-, 50-, 60-, and 72-inch Regular Sections, and in 40-, 50- and 60-inch Narrow Sections. A great improvement over pipe coils for heating and ventilating work; also for drying work in lumber kilns laundries, hotels, factories, mills, etc.

Leading Features

Few Parts: Section consists of three parts—main casting and two hexagon nipples. The equivalent coil consists of a base, eight risers, four nipples and eight elbows, or a total of twenty-one pieces—difference in favor of the Vento Section of 1 to 7.

Few Joints: Section is complete with four screwed joints. The equivalent pipe coil requires twenty-four screwed joints, or a difference in favor of the Vento Section of 1 to 6, or one-sixth as many joints.

Simplicity: Sections are easily handled and transported, and may be carried through doors or windows of any building, and can then be assembled into a complete heater. The equivalent pipe coil stacks are cumbersome, difficult to handle and transport.

Small Space: A complete **Vento** Heater is compact, and occupies about 15 per cent. less space than the equivalent pipe-coil heater. This fact invests the **Vento** Heater with great value, particularly where space is an important factor.

Elastic Properties: The ease and simplicity with which the **Vento** Heater may be either increased or reduced in its capacity, or repaired, are features which will commend it to architects and heating engineers.

Vento Cast-Iron Heaters—Continued

For Fan and Blower Work



Regular Section



Cut-away



Narrow Section

Circulation

A rapid and uniform circulation of the steam is important and is well provided in the **Vento** Heater by having the steam enter at the top of each section.

The force of the steam carries it through the connecting ports, and drives the air down each of the sections to the air vents at the bottom, thereby securing an even and quick circulation without noise or water-hammer, besides producing equal expansion with no risk of fracture.

In pipe-coil heaters the base is usually divided into two compartments. The steam enters on one side of the partition and must then rise through a series of one-inch pipes, sometimes 8 to 10 feet, before it can deposit the water of condensation in the return or opposite row of pipes, where it belongs.

The result is that, when using low-pressure steam in cold weather, the condensation is so rapid in the first rows of pipes that a partial vacuum is created, having a tendency to hold the condensation in suspension. The water coming in contact with the, rushing steam, causes violent water-hammer and unequal expansion of the base, with consequent liability to breakage. The construction of the **Vento** Heater prevents such difficulty.

Vento Cast-Iron Heaters—Continued

For Steam or Water

Regular Section—Ratings and Free Areas
30" Section (Steam or Water)—8 sq. ft. Height, 29 $\frac{7}{8}$ ".
Width, 9 $\frac{1}{8}$ ".

| No. of Sections in Stack | Sq. ft. of Heating Surface | 5 $\frac{3}{8}$ " Centres of Sections | | 5" Centres of Sections | | 4 $\frac{5}{8}$ " Centres of Sections | | 4" Centres of Sections | |
|--------------------------|----------------------------|---------------------------------------|-------------------------|--------------------------|-------------------------|---------------------------------------|-------------------------|--------------------------|-------------------------|
| | | 52% of Face | | Standard 44% of Face | | 37% of Face | | 24% of Face | |
| | | Net Air Space in Sq. Ft. | †Width of Stack in Ins. | Net Air Space in Sq. Ft. | †Width of Stack in Ins. | Net Air Space in Sq. Ft. | †Width of Stack in Ins. | Net Air Space in Sq. Ft. | †Width of Stack in Ins. |
| 10 | 80 | 5.42 | 54 | 4.60 | 50 | 3.90 | 46 | 2.25 | 40 |
| 11 | 88 | 5.96 | 59 | 5.06 | 55 | 4.29 | 51 | 2.81 | 44 |
| 12 | 96 | 6.50 | 65 | 5.52 | 60 | 4.68 | 55 | 3.06 | 48 |
| 13 | 104 | 7.04 | 70 | 5.98 | 65 | 5.07 | 60 | 3.32 | 52 |
| 14 | 112 | 7.57 | 75 | 6.44 | 70 | 5.46 | 65 | 3.57 | 56 |
| 15 | 120 | 8.11 | 81 | 6.90 | 75 | 5.85 | 69 | 3.83 | 60 |
| 16 | 128 | 9.65 | 86 | 7.36 | 80 | 6.24 | 74 | 4.08 | 64 |
| 17 | 136 | 9.19 | 91 | 7.82 | 85 | 6.63 | 79 | 4.34 | 68 |
| 18 | 144 | 9.73 | 97 | 8.28 | 90 | 7.02 | 83 | 4.59 | 72 |
| 19 | 152 | 10.27 | 102 | 8.75 | 95 | 7.41 | 88 | 4.85 | 76 |
| 20 | 160 | 10.81 | 108 | 9.21 | 100 | 7.80 | 92 | 5.11 | 80 |
| 21 | 168 | 11.35 | 113 | 9.67 | 105 | 8.19 | 97 | 5.36 | 84 |
| 22 | 176 | 11.89 | 118 | 10.13 | 110 | 8.58 | 102 | 5.62 | 88 |
| 23 | 184 | 12.42 | 124 | 10.59 | 115 | 8.97 | 106 | 5.87 | 92 |
| 24 | 192 | 12.96 | 129 | 11.05 | 120 | 9.36 | 111 | 6.13 | 96 |

40" Section (Steam or Water)—10.75 sq. ft. Height, 40 $\frac{1}{2}$ "
Width, 9 $\frac{1}{8}$ "

| | | 5 $\frac{3}{8}$ " Centres | | 5" Centres | | 4 $\frac{5}{8}$ " Centres | | 4" Centres | |
|----|--------|---------------------------|-----|------------|-----|---------------------------|-----|------------|----|
| | | | | | | | | | |
| 10 | 107.50 | 7.29 | 54 | 6.20 | 50 | 5.25 | 46 | 3.50 | 40 |
| 11 | 118.25 | 8.02 | 59 | 6.82 | 55 | 5.77 | 51 | 3.85 | 44 |
| 12 | 129.00 | 8.74 | 65 | 7.44 | 60 | 6.30 | 55 | 4.20 | 48 |
| 13 | 139.75 | 9.47 | 70 | 8.06 | 65 | 6.82 | 60 | 4.55 | 52 |
| 14 | 150.50 | 10.19 | 75 | 8.68 | 70 | 7.35 | 65 | 4.90 | 56 |
| 15 | 161.25 | 10.91 | 81 | 9.30 | 75 | 7.87 | 69 | 5.25 | 60 |
| 16 | 172.00 | 11.64 | 86 | 9.92 | 80 | 8.40 | 74 | 5.60 | 64 |
| 17 | 182.75 | 12.36 | 91 | 10.54 | 85 | 8.92 | 79 | 5.95 | 68 |
| 18 | 193.50 | 13.09 | 97 | 11.16 | 90 | 9.45 | 83 | 6.30 | 72 |
| 19 | 204.25 | 13.82 | 102 | 11.78 | 95 | 9.97 | 88 | 6.65 | 76 |
| 20 | 215.00 | 14.45 | 108 | 12.40 | 100 | 10.50 | 92 | 7.00 | 80 |
| 21 | 225.75 | 15.26 | 113 | 13.02 | 105 | 11.02 | 97 | 7.35 | 84 |
| 22 | 236.50 | 15.98 | 118 | 13.64 | 110 | 11.55 | 102 | 7.70 | 88 |
| 23 | 247.25 | 16.71 | 124 | 14.26 | 115 | 12.07 | 106 | 8.05 | 92 |
| 24 | 258.00 | 17.43 | 129 | 14.88 | 120 | 12.60 | 111 | 8.40 | 96 |

50" Section (Steam or Water)—13.5 sq. ft. Height, 50 $\frac{3}{4}$ "
Width 9 $\frac{1}{8}$ "

| 10 | 135.0 | 9.05 | 54 | 7.68 | 50 | 6.50 | 46 | 50-inch Sections can be assembled on 4-inch centres (See "Engineers' Data on Vento Heaters.") | |
|----|-------|-------|-----|-------|-----|-------|-----|---|--|
| 11 | 148.5 | 9.95 | 59 | 8.45 | 55 | 7.15 | 51 | | |
| 12 | 162.0 | 10.85 | 65 | 9.22 | 60 | 7.80 | 55 | | |
| 13 | 175.5 | 11.75 | 70 | 9.99 | 65 | 8.45 | 60 | | |
| 14 | 189.0 | 12.65 | 75 | 10.76 | 70 | 9.10 | 65 | | |
| 15 | 202.5 | 13.55 | 81 | 11.53 | 75 | 9.75 | 69 | | |
| 16 | 216.0 | 14.45 | 86 | 12.30 | 80 | 10.40 | 74 | | |
| 17 | 229.5 | 15.35 | 91 | 13.07 | 85 | 11.05 | 79 | | |
| 18 | 243.0 | 16.25 | 97 | 13.84 | 90 | 11.70 | 83 | | |
| 19 | 256.5 | 17.15 | 102 | 14.59 | 95 | 12.35 | 88 | | |
| 20 | 270.0 | 18.05 | 108 | 15.36 | 100 | 13.00 | 92 | | |
| 21 | 283.5 | 18.95 | 113 | 16.13 | 105 | 13.65 | 97 | | |
| 22 | 297.0 | 19.85 | 118 | 16.90 | 110 | 14.30 | 102 | | |
| 23 | 310.5 | 20.75 | 124 | 17.67 | 115 | 14.95 | 106 | | |
| 24 | 324.0 | 21.65 | 129 | 18.44 | 120 | 15.60 | 111 | | |

Approx. weights—Actual, 8.2 lbs. per sq. ft. Shipping, 9 lbs. per sq. ft.

†NOTE.—Add to the width of stack 2 $\frac{1}{2}$ inches for staggering of stacks—except 4-inch centres not staggered.

Vento Cast-Iron Heaters—Continued

For Steam or Water

Regular Section—Ratings and Free Areas

60" Section (Steam or Water)—16 sq. ft. Height, $60\frac{11}{16}$ ".
Width, $9\frac{1}{8}$ ".

| No. of Sec- tions in stack | Sq. ft of Heat- ing Sur- face | 5 $\frac{3}{8}$ " Cent. of Sec's | | 5" Cent. of Sec's | | 4 $\frac{5}{8}$ " Cent. of Sec's | |
|---|--|----------------------------------|---------------------------------|---------------------------------|---------------------------------|----------------------------------|---------------------------------|
| | | 52% of Face | | Stand .44% of Face | | 37% of Face | |
| | | Net Air Space in Sq. Feet | †Width of Stack in Inches | Net Air Space in Sq. Feet | †Width of Stack in Inches | Net Air Space in Sq. Feet | †Width of Stack in Inches |
| 10 | 160 | 10.85 | 54 | 9.21 | 50 | 7.81 | 46 |
| 11 | 176 | 11.93 | 59 | 10.13 | 55 | 8.59 | 51 |
| 12 | 192 | 13.00 | 65 | 11.05 | 60 | 9.37 | 55 |
| 13 | 208 | 14.08 | 70 | 11.97 | 65 | 10.15 | 60 |
| 14 | 224 | 15.15 | 75 | 12.89 | 70 | 10.93 | 65 |
| 15 | 240 | 16.23 | 81 | 13.81 | 75 | 11.71 | 69 |
| 16 | 256 | 17.31 | 86 | 14.73 | 80 | 12.49 | 74 |
| 17 | 272 | 18.39 | 91 | 15.65 | 85 | 13.27 | 79 |
| 18 | 288 | 19.46 | 97 | 16.57 | 90 | 14.05 | 83 |
| 19 | 304 | 20.54 | 102 | 17.50 | 95 | 14.83 | 88 |
| 20 | 320 | 21.62 | 108 | 18.42 | 100 | 15.61 | 92 |
| 21 | 336 | 22.70 | 113 | 19.34 | 105 | 16.39 | 97 |
| 22 | 352 | 23.78 | 118 | 20.26 | 110 | 17.17 | 102 |
| 23 | 368 | 24.85 | 124 | 21.18 | 115 | 17.95 | 106 |
| 24 | 384 | 25.93 | 129 | 22.10 | 120 | 18.73 | 111 |

72" Section (Steam or Water)—19 sq. ft. Height, $72\frac{3}{32}$ ".
Width, $9\frac{1}{8}$ ".

| | | 5 $\frac{3}{8}$ " Centres | | 5" Centres | | 4 $\frac{5}{8}$ " Centres | |
|----|-----|---------------------------|-----|------------|-----|---------------------------|-----|
| 10 | 190 | 13.03 | 54 | 11.04 | 50 | 9.37 | 46 |
| 11 | 209 | 14.31 | 59 | 12.17 | 55 | 10.30 | 51 |
| 12 | 228 | 15.60 | 65 | 13.27 | 60 | 11.25 | 55 |
| 13 | 247 | 16.90 | 70 | 14.35 | 65 | 12.18 | 60 |
| 14 | 266 | 18.19 | 75 | 15.46 | 70 | 13.11 | 65 |
| 15 | 285 | 19.49 | 81 | 16.58 | 75 | 14.06 | 69 |
| 16 | 304 | 20.78 | 86 | 17.70 | 80 | 14.99 | 74 |
| 17 | 323 | 22.07 | 91 | 18.78 | 85 | 15.92 | 79 |
| 18 | 342 | 23.34 | 97 | 19.88 | 90 | 16.86 | 83 |
| 19 | 361 | 24.64 | 102 | 21.00 | 95 | 17.80 | 88 |
| 20 | 380 | 25.95 | 108 | 22.10 | 100 | 18.73 | 92 |
| 21 | 399 | 27.25 | 113 | 23.20 | 105 | 19.67 | 97 |
| 22 | 418 | 28.52 | 118 | 24.31 | 110 | 20.60 | 102 |
| 23 | 437 | 29.80 | 124 | 25.40 | 115 | 21.54 | 106 |
| 24 | 456 | 31.10 | 129 | 26.50 | 120 | 22.47 | 111 |

Approx. weights—Actual, 8.2lbs. per sq. ft. Shipping, 9 lbs. per sq. ft.

†NOTE.—Width of stack includes 2 inches for staggering of stacks.

NOTE.—60-inch Sections can be assembled on 4-inch centres. (See
"Engineer's Data on Vento Heaters.")

Shipments

Unless otherwise ordered, we ship the Vento Heater in blocks of five, six or seven sections, firmly crated and bolted together, so that it is almost impossible for the Vento Stack to arrive at point of destination in bad order. As each block is easily handled, our shipments have a great advantage over pipe-coil heaters, which may be strained or damaged by reason of large units and heavy weights.

Vento Cast-Iron Heaters—Continued

For Steam or Water

Narrow 40" Section—7.5 sq. ft. Height, $40\frac{15}{16}$ ". Width, $6\frac{3}{4}$ ".

Narrow Section—Ratings and Free Areas

| No. of Sections in Stack | Sq. ft. of Heating Surface | 5 $\frac{3}{8}$ " Cent. of Sec's | | 5" Cent. of Sec's | | 4 $\frac{5}{8}$ " Cent. of Sec's | |
|--------------------------|----------------------------|----------------------------------|---------------------------|---------------------------|---------------------------|----------------------------------|---------------------------|
| | | 52% of Face | | Stand. 44% of Face | | 37% of Face | |
| | | Net Air Space in Sq. Feet | †Width of Stack in Inches | Net Air Space in Sq. Feet | †Width of Stack in Inches | Net Air Space in Sq. Feet | †Width of Stack in Inches |
| 10 | 75.0 | 7.29 | 54 | 6.20 | 50 | 5.25 | 46 |
| 11 | 82.5 | 8.02 | 59 | 6.82 | 55 | 5.77 | 51 |
| 12 | 90.0 | 8.74 | 65 | 7.44 | 60 | 6.30 | 55 |
| 13 | 97.5 | 9.47 | 70 | 8.06 | 65 | 6.82 | 60 |
| 14 | 105.0 | 10.19 | 75 | 8.68 | 70 | 7.35 | 65 |
| 15 | 112.5 | 10.91 | 81 | 9.30 | 75 | 7.87 | 69 |
| 16 | 120.0 | 11.64 | 86 | 9.92 | 80 | 8.40 | 74 |
| 17 | 127.5 | 12.36 | 91 | 10.54 | 85 | 8.92 | 79 |
| 18 | 135.0 | 13.09 | 97 | 11.16 | 90 | 9.45 | 83 |
| 19 | 142.5 | 13.82 | 102 | 11.78 | 95 | 9.97 | 88 |
| 20 | 150.0 | 14.54 | 108 | 12.40 | 100 | 10.50 | 92 |
| 21 | 157.5 | 15.26 | 113 | 13.02 | 105 | 11.02 | 97 |
| 22 | 165.0 | 15.98 | 118 | 13.64 | 110 | 11.55 | 102 |
| 23 | 172.5 | 16.71 | 124 | 14.26 | 115 | 12.07 | 106 |
| 24 | 180.0 | 17.43 | 129 | 14.88 | 120 | 12.60 | 111 |

Narrow 50" Section—9.5 sq. ft. Height, $50\frac{23}{32}$ ". Width, $6\frac{3}{4}$ ".

| | | 5 $\frac{3}{8}$ " Centres | | 5" Centres | | 4 $\frac{5}{8}$ " Centres | |
|----|-------|---------------------------|-----|------------|-----|---------------------------|-----|
| | | | | | | | |
| 10 | 95.0 | 9.05 | 54 | 7.68 | 50 | 6.50 | 46 |
| 11 | 104.5 | 9.95 | 59 | 8.45 | 55 | 7.15 | 51 |
| 12 | 114.0 | 10.85 | 65 | 9.22 | 60 | 7.80 | 55 |
| 13 | 123.5 | 11.75 | 70 | 9.99 | 65 | 8.45 | 60 |
| 14 | 133.0 | 12.65 | 75 | 10.76 | 70 | 9.10 | 65 |
| 15 | 142.5 | 13.55 | 81 | 11.53 | 75 | 9.75 | 69 |
| 16 | 152.0 | 14.45 | 86 | 12.30 | 80 | 10.40 | 74 |
| 17 | 161.5 | 15.35 | 91 | 13.07 | 85 | 11.05 | 79 |
| 18 | 171.0 | 16.25 | 97 | 13.84 | 90 | 11.70 | 83 |
| 19 | 180.5 | 17.15 | 102 | 14.59 | 95 | 12.35 | 88 |
| 20 | 190.0 | 18.05 | 108 | 15.36 | 100 | 13.00 | 92 |
| 21 | 199.5 | 18.95 | 113 | 16.13 | 105 | 13.65 | 97 |
| 22 | 209.0 | 19.85 | 118 | 16.90 | 110 | 14.30 | 102 |
| 23 | 218.5 | 20.75 | 124 | 17.67 | 115 | 14.95 | 106 |
| 24 | 228.0 | 21.65 | 129 | 18.44 | 120 | 15.60 | 111 |

Narrow 60" Section—11 sq. ft. Height, $60\frac{11}{16}$ ". Width, $6\frac{3}{4}$ ".

| 10 | 110.0 | 10.85 | 54 | 9.21 | 50 | 7.81 | 46 |
|----|-------|-------|-----|-------|-----|-------|-----|
| 11 | 121.0 | 11.93 | 59 | 10.13 | 55 | 8.59 | 51 |
| 12 | 132.0 | 13.00 | 65 | 11.05 | 60 | 9.37 | 55 |
| 13 | 143.0 | 14.08 | 70 | 11.97 | 65 | 10.15 | 60 |
| 14 | 154.0 | 15.15 | 75 | 12.89 | 70 | 10.93 | 65 |
| 15 | 165.0 | 16.23 | 81 | 13.81 | 75 | 11.71 | 69 |
| 16 | 176.0 | 17.31 | 86 | 14.73 | 80 | 12.49 | 74 |
| 17 | 187.0 | 18.39 | 91 | 15.65 | 85 | 13.27 | 79 |
| 18 | 198.0 | 19.46 | 97 | 16.57 | 90 | 14.05 | 83 |
| 19 | 209.0 | 20.54 | 102 | 17.50 | 95 | 14.83 | 88 |
| 20 | 220.0 | 21.62 | 108 | 18.42 | 100 | 15.61 | 92 |
| 21 | 231.0 | 22.70 | 113 | 19.34 | 105 | 16.39 | 97 |
| 22 | 242.0 | 23.78 | 118 | 20.26 | 110 | 17.17 | 102 |
| 23 | 253.0 | 24.85 | 124 | 21.18 | 115 | 17.95 | 106 |
| 24 | 264.0 | 25.93 | 129 | 22.10 | 120 | 18.73 | 111 |

†NOTE.—Add to the width of stack $2\frac{1}{2}$ inches for staggering of stacks.

Vento Cast-Iron Hot-Blast Heater

For Steam or Water

Prices liable to change with or without notice.

List Prices

Regular Sections—9 $\frac{1}{8}$ inches wide

| | Per Sq.Ft. |
|------------------------------------|------------|
| 30-inch Section, 8.00 sq. ft..... | \$1.15 |
| 40-inch Section, 10.75 sq. ft..... | .90 |
| 50-inch Section, 13.50 sq. ft..... | .90 |
| 60-inch Section, 16.00 sq. ft..... | .90 |
| 72-inch Section, 19.00 sq. ft..... | 1.15 |

Narrow Sections—6 $\frac{3}{4}$ inches wide

| | Per Sq.Ft. |
|------------------------------------|------------|
| 40-inch Section, 7.50 sq. ft..... | \$1.15 |
| 50-inch Section, 9.50 sq. ft..... | 1.15 |
| 60-inch Section, 11.00 sq. ft..... | 1.15 |

Extra 2-, 2 $\frac{1}{2}$ -and 3-inch Hexagon Nipples

| | |
|---|--------|
| For 4 $\frac{5}{8}$ -, 5-, or 5 $\frac{3}{8}$ -inch centres of loops— | |
| 2-inch, each..... | \$0.80 |
| 2 $\frac{1}{2}$ -inch, each..... | 1.00 |
| 3-inch, each..... | 1.45 |
| 2- and 2 $\frac{1}{2}$ -inch Bushings, each..... | .50 |
| 3-inch Bushings, each..... | .65 |
| 2- and 2 $\frac{1}{2}$ -inch Plugs, each..... | .45 |
| 3-inch Plugs, each..... | .60 |
| Vento Nipple Wrench, for 2-inch nipple..... | 9.00 |
| Vento Nipple Wrench, for 2 $\frac{1}{2}$ -inch nipple..... | 16.00 |
| Vento Nipple Wrench, for 3-inch nipple..... | 17.50 |

No charge made for nipples except where more are ordered than are regularly required to make up with order.

Tappings

All patterns except 30-inch and 72-inch are regularly tapped supply and return two and one-half inches, but if desired supply tappings can be furnished three inches. Both supply and return tappings on the 72inch pattern are three inches. Both supply and return tappings on 30-inch are 2-inches.

Climax Indirect Radiators

Manufactured at Toronto Plant

For Steam or Water



Capacities and Dimensions

| Name | Length in inches | Height in inches | Width in inches | Distance Centre to Centre of Tapping | Number Square Feet |
|-------------|---------------------|---------------------|--------------------|---|--------------------------|
| Climax..... | 36 | 11 | 4 | 7 | 13 |

Climax Indirect sections are connected together at top and bottom with 2-inch Safford right and left screw nipples.

For additional measurements, see page 139.

See page 119 for List Prices.

Climax Indirect Radiators

For Steam or Water

Data for Climax Radiators

| Sec- tions in Stack | Sq. Feet of Heating Surface | Area Cold Air Supply Sq. Inches | Area Hot Air Flue Sq. Inches | Size for Brick- work Hot Air Flue, Inches | Size Register Inches | Ratio 1 to 30 | Ratio 1 to 35 | Ratio 1 to 40 |
|------------------------------|---|--|---|---|----------------------------|------------------|------------------|------------------|
| 2 | 26 | 54 | 72 | 8x 8 | 9x12 | 780 | 910 | 1,040 |
| 3 | 39 | 72 | 96 | 8x12 | 10x14 | 1,170 | 1,365 | 1,560 |
| 4 | 52 | 90 | 120 | 8x12 | 12x15 | 1,560 | 1,820 | 2,080 |
| 5 | 65 | 108 | 144 | 12x12 | 12x19 | 1,950 | 2,275 | 2,600 |
| 6 | 78 | 126 | 168 | 12x12 | 14x22 | 2,340 | 2,730 | 3,120 |
| 7 | 91 | 144 | 192 | 12x16 | 14x24 | 2,730 | 3,185 | 3,640 |
| 8 | 104 | 162 | 226 | 12x16 | 16x20 | 3,120 | 3,640 | 4,160 |
| 9 | 117 | 180 | 240 | 12x20 | 16x24 | 3,510 | 4,095 | 4,680 |
| 10 | 130 | 198 | 264 | 12x20 | 20x20 | 3,900 | 4,550 | 5,200 |
| 11 | 143 | 216 | 288 | 12x24 | 20x24 | 4,200 | 5,005 | 5,720 |
| 12 | 156 | 234 | 312 | 12x24 | 20x24 | 4,680 | 5,460 | 6,240 |

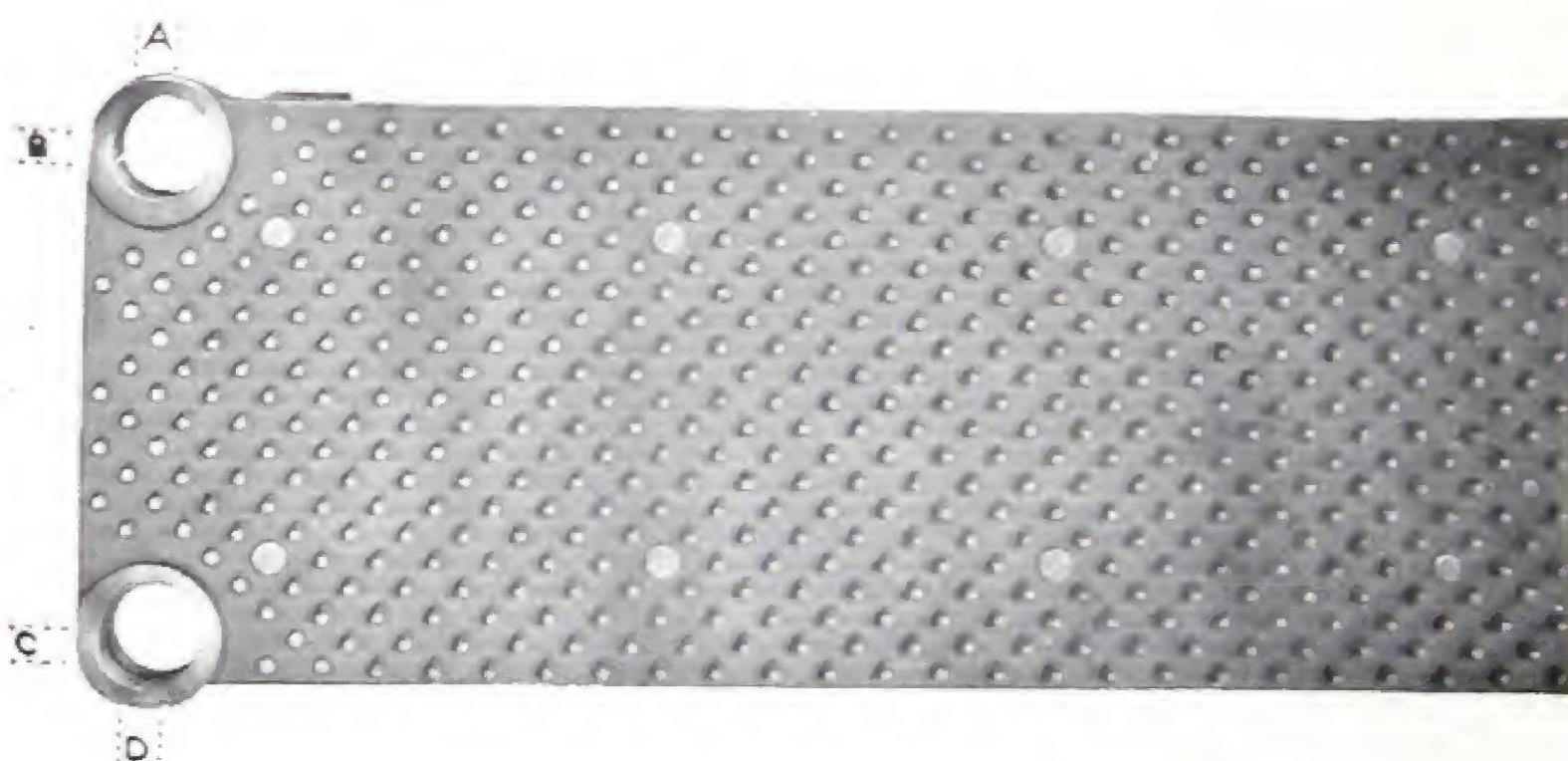
NOTE.—Sections will be shipped separately unless orders specify that they are required assembled in stacks.

Sanitary School Pin Indirect Radiators

Manufactured at Toronto Plant
For Steam and Water



Steam Section



Water Section

See page 141 for measurements.
See page 119 for List Prices.

Sanitary School Pin Indirect Radiators

For Steam or Water

Capacities and Dimensions

| Name | Length in Inches | Height in Inches | Height of Con- necting Points | Width Occupied in Stack | Distance Centre to Centre Opening | Square Feet |
|---------------|------------------------|------------------------|--|----------------------------------|--|----------------|
| School Pin... | 36 | $13 \frac{7}{8}$ | 15 | 4" | $11 \frac{3}{8}$ | 20 |
| " " ... | $34 \frac{3}{4}$ | $11 \frac{1}{2}$ | $13 \frac{3}{4}$ | 4" | $10 \frac{1}{8}$ | 15 |

School Pin Indirect sections (20 square foot sections) are connected with 2-inch right and left internal nipples.

School Pin Indirect sections (15 square foot sections) are connected with 2-inch Safford right and left internal nipples only.

When tappings are at A, B, C or D, add $\frac{1}{4}$ inch to height or length of section to allow for hub.

Sections will be shipped separately, unless orders specify that they are required assembled in stacks. When ordered assembled, they will be shipped in stacks of not more than six sections each.

Information Required for Ordering Radiators and Radiator Repairs

State plainly the Catalogue name. Especially mention the height of radiator required and where steam state whether it is one pipe or two pipe, plain or ornamental, round or square top, standard or long legs, and where for a vacuum system, state plainly whether the tappings are right or left and the sizes thereof.

When ordering radiator leg sections, give full particulars as to Catalogue name, whether plain or ornamental, square or round top, height whether for feed or return end, one pipe or two pipe steam, where tapping is to be located, whether same is right and left, and the size of it. Also the size of the inside connection of the section and whether it is right or left. State whether it is a water section used for steam having nipple connections top and bottom or if connection is only at bottom.

Where ordering steam sections for the centre of a radiator state whether it is a centre leg or ordinary centre section, and all other particulars asked for above.

Where ordering sections for repairs of hot water radiators, give all particulars asked for above, and further whether tapped for twin or single connection, and whether tapping is right or left, and the size of same.

When ordering curved, angle or circular radiators, kindly refer to page 152, and give all dimensions clearly.

When ordering repairs for radiators, send order direct to the office or branch from which the radiation was purchased and if possible send number and date of invoice referring to same.

Tappings of Peerless Radiators

STEAM

One-Pipe Work

| | | |
|--------------------------------------|-----------------|------|
| Up to 25 square feet, inclusive..... | 1 | inch |
| Above 25 up to 60 square feet..... | 1 $\frac{1}{4}$ | inch |
| Above 60 up to 100 square feet..... | 1 $\frac{1}{2}$ | inch |
| Above 100 square feet..... | 2 | inch |

Two-Pipe Work

| | | | | |
|--------------------------------------|-----------------|---|-----------------|------|
| Up to 50 square feet, inclusive..... | 1 | x | $\frac{3}{4}$ | inch |
| Above 50 up to 95 square feet..... | 1 $\frac{1}{4}$ | x | 1 | inch |
| Above 95 square feet..... | 1 $\frac{1}{2}$ | x | 1 $\frac{1}{4}$ | inch |

WATER

Tapped for Supply and Return or Twin Connection

| | | | | |
|--------------------------------------|-----------------|---|-----------------|------|
| Up to 50 square feet, inclusive..... | 1 | x | 1 | inch |
| Above 50 up to 100 square feet..... | 1 $\frac{1}{4}$ | x | 1 $\frac{1}{4}$ | inch |
| Above 100 square feet..... | 1 $\frac{1}{2}$ | x | 1 $\frac{1}{2}$ | inch |

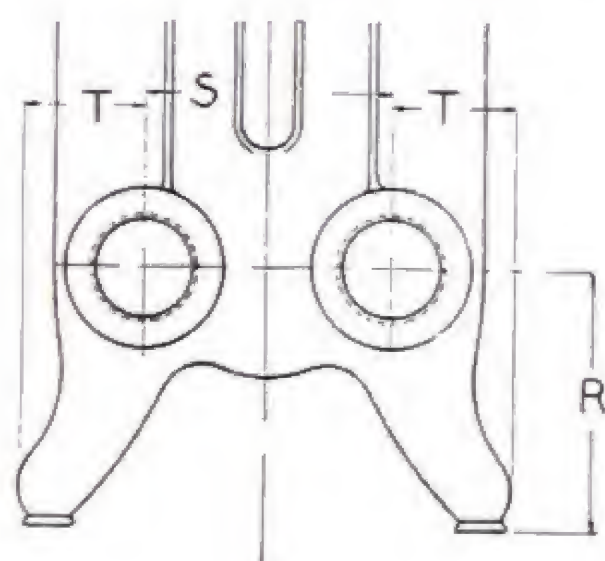
All Twin Connection Water Radiators are tapped left-hand and all single connection or opposite endappings will be right-hand thread, unless otherwise specified on orders.

All Wall Radiators for Water are tapped top and bottom, same ends; left-hand unless otherwise specified.

All Steam Radiators, one pipe, are tapped left-hand, and if two-pipe tapping is desired, tappings are right-hand unless otherwise specified on order,

Twin Tappings

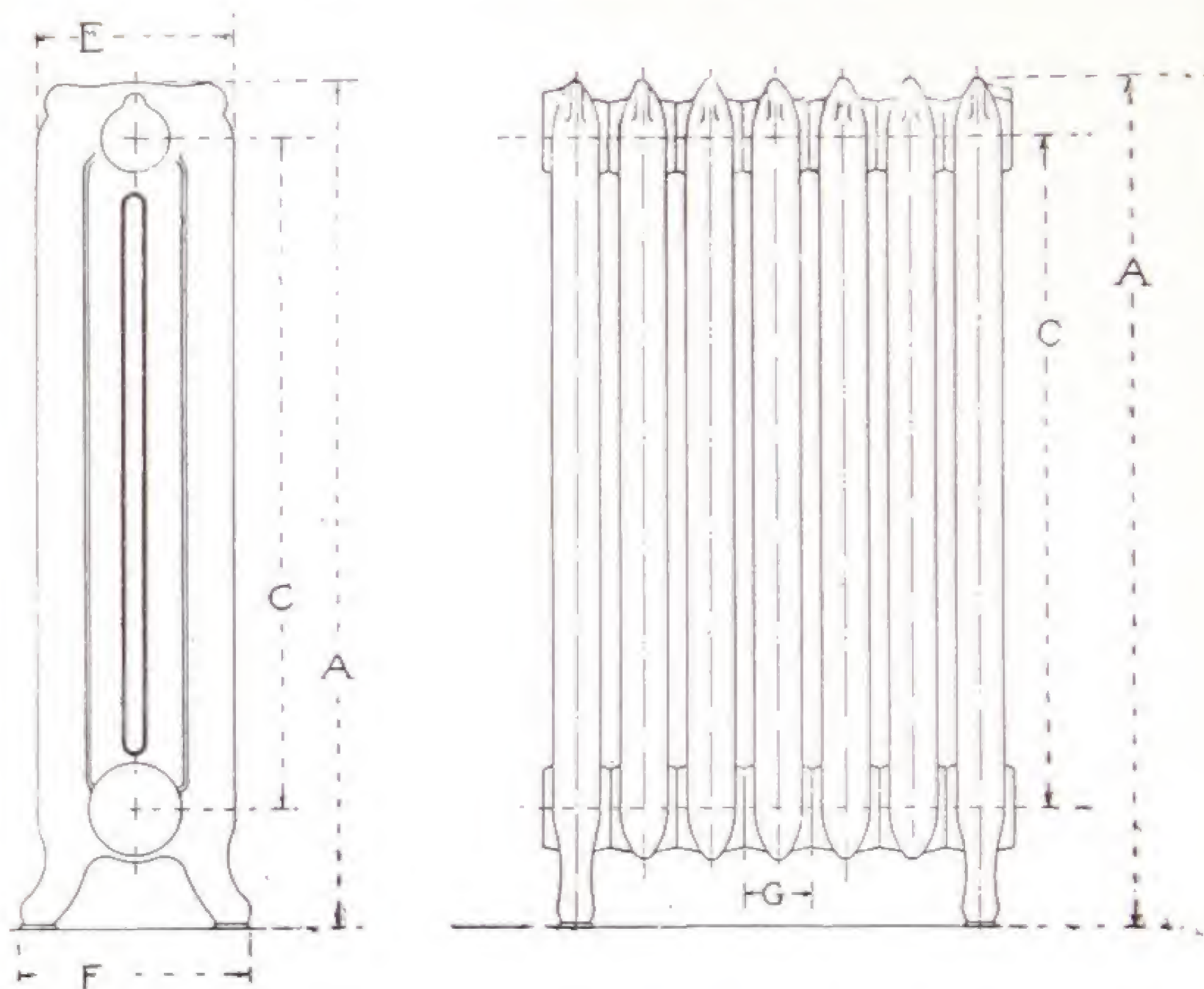
Special Measurements



Measurements are in inches

| Pattern | R | S | T |
|---------------|-----------------|-----------------|-----------------|
| 2 Column..... | 4 $\frac{1}{2}$ | 3 $\frac{1}{4}$ | 2 $\frac{5}{8}$ |
| 3-Column..... | 4 $\frac{1}{2}$ | 3 $\frac{1}{4}$ | 3 $\frac{3}{8}$ |
| 4-Column..... | 4 $\frac{1}{2}$ | 3 $\frac{1}{4}$ | 4 |
| Window..... | 3 | 3 $\frac{1}{4}$ | 4 $\frac{5}{8}$ |

Measurements of Peerless Direct Radiators



A. Total Height.
C. Distance from centre of top
to centre of bottom opening
of Water Radiators.

E. Width of sections.
F. Width at feet.
G. Distance from centre to centre
of sections.

Distance from Floor to Centre of Lower Tappings

Measurements are in Inches

| Pattern | Water Supply and Return | Single Pipe- Steam | Two-Pipe Steam | |
|-----------------------------|----------------------------------|--------------------------|----------------|--------|
| | | | Supply | Return |
| Peerless 1-Column. | 4 1/2 | 4 | 4 1/2 | 4 |
| Peerless 2-Column. | 4 1/2 | 4 | 4 1/2 | 4 |
| Peerless 3-Column. | 4 1/2 | 4 | 4 1/2 | 4 |
| Peerless 4-Column. | 4 1/2 | 4 1/2 | 4 1/2 | 4 1/2 |
| Peerless Window | 3 | 3 | 3 | 3 |
| Peerless Hospital | 4 1/2 | 4 1/2 | 4 1/2 | 4 1/2 |

Measurements of Peerless Direct Radiators

Measurements are in Inches. See outline, page 144

| Pattern and Catalogue Height | | A | C | E | F | G | Heating Surface Sq. Ft. |
|------------------------------------|----|-------------------|-------------------|-----------------|-----------------|----------------|-------------------------------|
| One Column | 38 | $38\frac{5}{16}$ | $31\frac{15}{16}$ | $4\frac{3}{16}$ | $5\frac{1}{4}$ | $2\frac{1}{2}$ | 3 |
| | 32 | $32\frac{15}{16}$ | $25\frac{15}{16}$ | $4\frac{3}{16}$ | $5\frac{1}{4}$ | $2\frac{1}{2}$ | $2\frac{1}{2}$ |
| | 26 | $26\frac{1}{2}$ | $20\frac{1}{16}$ | $4\frac{3}{16}$ | $5\frac{1}{4}$ | $2\frac{1}{2}$ | 2 |
| | 23 | $23\frac{3}{8}$ | $16\frac{19}{32}$ | $4\frac{3}{16}$ | $5\frac{1}{4}$ | $2\frac{1}{2}$ | $1\frac{2}{3}$ |
| | 20 | $20\frac{3}{16}$ | $13\frac{49}{64}$ | $4\frac{3}{16}$ | $5\frac{1}{4}$ | $2\frac{1}{2}$ | $1\frac{1}{2}$ |
| Two-Column | 45 | $45\frac{25}{64}$ | $38\frac{33}{32}$ | $7\frac{3}{8}$ | $8\frac{3}{16}$ | $2\frac{1}{2}$ | 5 |
| | 38 | $37\frac{45}{64}$ | $31\frac{3}{8}$ | $7\frac{3}{8}$ | $8\frac{3}{16}$ | $2\frac{1}{2}$ | 4 |
| | 32 | $31\frac{23}{64}$ | $25\frac{13}{64}$ | $7\frac{3}{8}$ | $8\frac{3}{16}$ | $2\frac{1}{2}$ | $3\frac{1}{3}$ |
| | 26 | $26\frac{5}{4}$ | $19\frac{19}{32}$ | $7\frac{3}{8}$ | $8\frac{3}{16}$ | $2\frac{1}{2}$ | $2\frac{2}{3}$ |
| | 23 | $23\frac{11}{64}$ | $16\frac{9}{16}$ | $7\frac{3}{8}$ | $8\frac{3}{16}$ | $2\frac{1}{2}$ | $2\frac{1}{3}$ |
| | 20 | $20\frac{1}{4}$ | $13\frac{41}{64}$ | $7\frac{3}{8}$ | $8\frac{3}{16}$ | $2\frac{1}{2}$ | 2 |
| Three-Column . . . | 45 | $45\frac{15}{16}$ | $38\frac{25}{32}$ | 9 | $9\frac{7}{8}$ | $2\frac{1}{2}$ | 6 |
| | 38 | $38\frac{11}{16}$ | $31\frac{3}{8}$ | 9 | $9\frac{7}{8}$ | $2\frac{1}{2}$ | 5 |
| | 32 | $32\frac{11}{16}$ | $25\frac{13}{64}$ | 9 | $9\frac{7}{8}$ | $2\frac{1}{2}$ | $4\frac{1}{2}$ |
| | 26 | $26\frac{19}{32}$ | $19\frac{15}{32}$ | 9 | $9\frac{7}{8}$ | $2\frac{1}{2}$ | $3\frac{3}{4}$ |
| | 22 | $22\frac{11}{32}$ | $15\frac{7}{32}$ | 9 | $9\frac{7}{8}$ | $2\frac{1}{2}$ | 3 |
| | 18 | $18\frac{5}{16}$ | $11\frac{3}{16}$ | 9 | $9\frac{7}{8}$ | $2\frac{1}{2}$ | $2\frac{1}{4}$ |
| Four-Column | 45 | 46 | $38\frac{25}{32}$ | $10\frac{1}{2}$ | $11\frac{1}{4}$ | 3 | 10 |
| | 38 | $38\frac{5}{16}$ | $31\frac{3}{8}$ | $10\frac{1}{2}$ | $11\frac{1}{4}$ | 3 | 8 |
| | 32 | $32\frac{7}{16}$ | $25\frac{13}{64}$ | $10\frac{1}{2}$ | $11\frac{1}{4}$ | 3 | $6\frac{1}{2}$ |
| | 26 | $26\frac{11}{16}$ | $19\frac{15}{32}$ | $10\frac{1}{2}$ | $11\frac{1}{4}$ | 3 | 5 |
| | 22 | $22\frac{7}{16}$ | $15\frac{7}{32}$ | $10\frac{1}{2}$ | $11\frac{1}{4}$ | 3 | 4 |
| | 18 | $18\frac{13}{32}$ | $11\frac{3}{16}$ | $10\frac{1}{2}$ | $11\frac{1}{4}$ | 3 | 3 |
| Window | 20 | 20 | $15\frac{1}{16}$ | $12\frac{1}{2}$ | $12\frac{1}{2}$ | 3 | 5 |
| | 16 | 16 | $11\frac{3}{8}$ | $12\frac{1}{2}$ | $12\frac{1}{2}$ | 3 | $3\frac{3}{4}$ |
| | 13 | 13 | $8\frac{1}{16}$ | $12\frac{1}{2}$ | $12\frac{1}{2}$ | 3 | 3 |
| Hospital (Two-Column) | 45 | $45\frac{5}{16}$ | $38\frac{25}{32}$ | $7\frac{3}{8}$ | $8\frac{1}{4}$ | $3\frac{1}{2}$ | 5 |
| | 38 | $37\frac{5}{8}$ | $31\frac{3}{8}$ | $7\frac{3}{8}$ | $8\frac{1}{4}$ | $3\frac{1}{2}$ | 4 |
| | 32 | $31\frac{47}{64}$ | $25\frac{13}{64}$ | $7\frac{3}{8}$ | $8\frac{1}{4}$ | $3\frac{1}{2}$ | $3\frac{1}{3}$ |
| | 26 | 26 | $19\frac{15}{32}$ | $7\frac{3}{8}$ | $8\frac{1}{4}$ | $3\frac{1}{2}$ | $2\frac{2}{3}$ |
| | 23 | $23\frac{3}{8}$ | $16\frac{9}{16}$ | $7\frac{3}{8}$ | $8\frac{1}{4}$ | $3\frac{1}{2}$ | $2\frac{1}{3}$ |
| | 20 | $20\frac{11}{64}$ | $13\frac{41}{64}$ | $7\frac{3}{8}$ | $8\frac{1}{4}$ | $3\frac{1}{2}$ | 2 |

Tappings for Safford Radiators

Standard Tappings—Water Radiators

All Safford Water Radiators will be tapped as per schedule below. If any special tappings are desired they should be plainly stated on orders.

Water Radiators, Single or Twin Connections, all Patterns:—

| | | | | |
|--|-----------------|---|-----------------|------|
| 50 square feet and under | 1 | x | 1 | inch |
| Above 50 square feet but not exceeding | | | | |
| 100 square feet | 1 $\frac{1}{4}$ | x | 1 $\frac{1}{4}$ | " |
| Above 100 square feet | 1 $\frac{1}{2}$ | x | 1 $\frac{1}{2}$ | " |

All Twin Connection Radiators are tapped left hand. All Single Connection or opposite end tappings will be made with right hand threads. All Water Radiators are shipped twin connection tapped left hand unless otherwise specified on orders.

All Wall Radiators for hot water are tapped top and bottom same end left hand, and will be shipped accordingly unless otherwise specified on orders. Wall Radiator sections are tapped 1 $\frac{1}{2}$ inch left hand and are bushed to sizes required.

Note.—When using union valves or union elbows please state this fact in ordering, so that connections may be tapped right hand.

Heat Generator

| | | | | |
|--|---------------|---|---------------|------|
| FIRST FLOOR—Up to 25 square feet . . . | $\frac{1}{2}$ | x | $\frac{1}{2}$ | inch |
| From 25 square feet to | | | | |
| 60 square feet | $\frac{3}{4}$ | x | $\frac{3}{4}$ | " |
| Over 60 square feet | 1 | x | 1 | " |
| SECOND FLOOR—Up to 30 square feet . | $\frac{1}{2}$ | x | $\frac{1}{2}$ | inch |
| From 30 square feet | | | | |
| to 100 square feet . | $\frac{3}{4}$ | x | $\frac{3}{4}$ | " |
| Over 100 square feet . | 1 | x | 1 | " |
| THIRD FLOOR—Up to 50 square feet . . | $\frac{1}{2}$ | x | $\frac{1}{2}$ | inch |
| From 50 square feet to | | | | |
| 125 square feet | $\frac{3}{4}$ | x | $\frac{3}{4}$ | " |
| Over 125 square feet . . | 1 | x | 1 | " |

Tappings for Safford Radiators

Standard Tappings—Steam Radiators

All Safford Steam Radiators will be tapped as per schedule below. If any special tappings are desired they should be plainly stated on orders.

One-Pipe Steam Radiators, Direct and Direct-Indirect:—

| | | |
|---|-------|------|
| 25 square feet and under..... | 1 | inch |
| Above 25 square feet but not exceeding 60 square feet..... | 1 1/4 | " |
| Above 60 square feet but not exceeding 100 square feet..... | 1 1/2 | " |
| Above 100 square feet..... | 2 | " |

All one pipe steam connections are tapped left hand with eccentric tappings.

Two-Pipe Steam Radiators, Direct and Direct-Indirect:—

| | | | | |
|--|-------|---|-------|------|
| 50 square feet and under..... | 1 | x | 3/4 | inch |
| Above 50 square feet but not exceeding 95 square feet..... | 1 1/4 | x | 1 | " |
| Above 95 square feet..... | 1 1/2 | x | 1 1/4 | " |

All two-pipe steam connections are tapped right hand. The tapping on return end of radiator being made eccentric.

Two-Pipe Steam Radiators, Indirect only:—

| | | | | |
|---|-------|---|-------|------|
| 40 square feet and under..... | 1 | x | 3/4 | inch |
| Above 40 square feet but not exceeding 80 square feet..... | 1 1/4 | x | 1 | " |
| Above 80 square feet but not exceeding 120 square feet..... | 1 1/2 | x | 1 1/4 | " |
| Above 120 square feet..... | 2 | x | 1 1/2 | " |

Steam Indirect Radiators are always tapped for two-pipe system.

Note:—When using union valves or union elbows please state this fact in ordering so that connections may be tapped right hand.

Safford Radiators

Tappings for Radiators For Special Steam Systems

TRANE VACUO-VAPOR SYSTEM

Radiator Tappings, Trane Vapor and Vacuum systems using Hot Water radiation with top inlet and bottom outlet opposite end.

| Square Feet Radiation..... | Inlet | Outlet |
|----------------------------|---------------------|---------------------|
| 1 to 40..... | $\frac{1}{2}$ inch. | $\frac{1}{2}$ inch. |
| 41 to 100..... | $\frac{3}{4}$ " | $\frac{1}{2}$ " |
| 101 to 180..... | 1 " | $\frac{1}{2}$ " |

Tappings right or left as specified.

TRANE VACUUM SYSTEM

Radiator Tappings, Trane Vacuum System, using Steam Radiation, Bottom Connection, opposite ends.

| Square Feet Radiation | Inlet | Outlet |
|-----------------------|---------------------|---------------------|
| 1 to 25..... | $\frac{1}{2}$ inch. | $\frac{1}{2}$ inch. |
| 26 to 80..... | $\frac{3}{4}$ " | $\frac{1}{2}$ " |
| 81 to 150..... | 1 " | $\frac{1}{2}$ " |
| 151 to 250..... | $1\frac{1}{4}$ " | $\frac{1}{2}$ " |
| 251 to 350..... | $1\frac{1}{2}$ " | $\frac{1}{2}$ " |

Tappings right or left as specified.

Tappings for Safford Radiators

For Special Steam Systems

Webster Modulation System

(Hot Water Radiator only used)

Direct Radiators Supply End

| | |
|-------------------|------------------|
| Up to 50 sq. ft. | $\frac{3}{4}"$ |
| Up to 100 sq. ft. | 1" |
| Up to 180 sq. ft. | 1 $\frac{1}{4}"$ |
| Up to 225 sq. ft. | 1 $\frac{1}{2}"$ |
| Returns | |
| Up to 100 sq. ft. | $\frac{1}{2}"$ |
| Up to 225 sq. ft. | $\frac{3}{4}"$ |

Direct-Indirect Radiators Supply End

| | |
|-------------------|------------------|
| Up to 16 sq. ft. | $\frac{1}{2}"$ |
| Up to 48 sq. ft. | $\frac{3}{4}"$ |
| Up to 75 sq. ft. | 1" |
| Up to 144 sq. ft. | 1 $\frac{1}{4}"$ |
| Up to 180 sq. ft. | 1 $\frac{1}{2}"$ |
| Returns | |
| Up to 50 sq. ft. | $\frac{1}{2}"$ |
| Up to 100 sq. ft. | $\frac{3}{4}"$ |
| Up to 225 sq. ft. | 1" |

All tappings are Right Hand. Flows at top and returns at bottom opposite end. Returns tapped eccentric. No air vent tapping.

Webster Vacuum System (Steam Type Radiators)

| HEATING SURFACE | Inlet | Outlet |
|----------------------------|------------------|----------------|
| 35 sq. ft. and under | $\frac{1}{2}"$ | $\frac{1}{2}"$ |
| 36 sq. ft. to 80 sq. ft. | $\frac{3}{4}"$ | $\frac{1}{2}"$ |
| 81 sq. ft. to 150 sq. ft. | 1" | $\frac{1}{2}"$ |
| 151 sq. ft. to 300 sq. ft. | 1 $\frac{1}{4}"$ | $\frac{3}{4}"$ |
| 301 sq. ft. to 450 sq. ft. | 1 $\frac{1}{2}"$ | $\frac{3}{4}"$ |

All returns tapped Right Hand eccentric. No air vent tapping (if tapped to be plugged). Flows tapped right or left hand thread as specified.

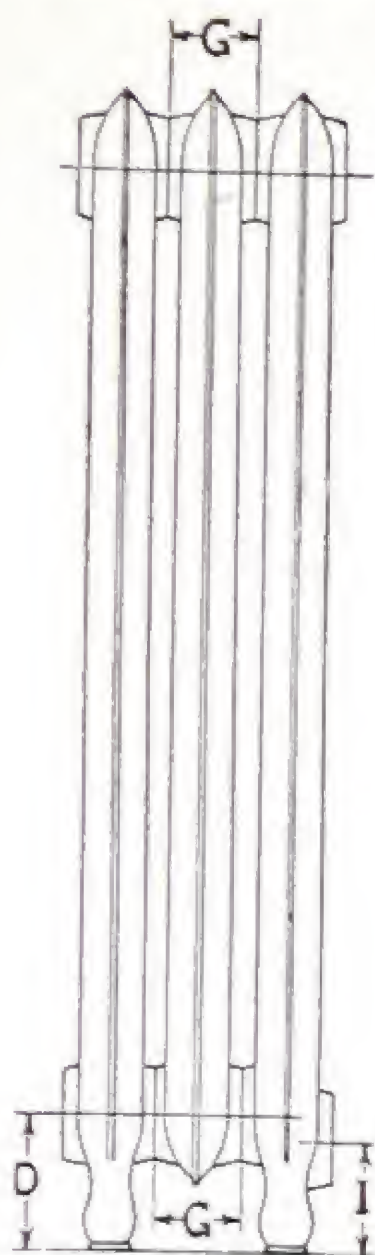
Safford Radiators



| Name | Catalogue Height | A | B | C | D | E | F | G | H | I | Heating Surface Sq. Ft. |
|--|------------------|--------------------|--------------------|--------------------|-----------------|------------------|------------------|-----------------|-----------------|-----------------|-------------------------|
| One Column * SAXON * VICTORIA and REGINA | 38 | 38 $\frac{5}{16}$ | 36 $\frac{7}{16}$ | 31 $\frac{13}{16}$ | 4 $\frac{1}{2}$ | 4 $\frac{3}{16}$ | 5 $\frac{1}{4}$ | 2 $\frac{1}{2}$ | | 4 | 3 |
| | 32 | 32 $\frac{1}{2}$ | 30 $\frac{1}{2}$ | 25 $\frac{1}{2}$ | 4 $\frac{1}{2}$ | 4 $\frac{3}{16}$ | 5 $\frac{1}{4}$ | 2 $\frac{1}{2}$ | | 4 | 2 $\frac{1}{2}$ |
| | 26 | 26 $\frac{1}{2}$ | 24 $\frac{3}{16}$ | 20 $\frac{1}{2}$ | 4 $\frac{1}{2}$ | 4 $\frac{3}{16}$ | 5 $\frac{1}{4}$ | 2 $\frac{1}{2}$ | | 4 | 2 |
| | 23 | 23 $\frac{1}{2}$ | 21 $\frac{3}{16}$ | 16 $\frac{1}{2}$ | 4 $\frac{1}{2}$ | 4 $\frac{3}{16}$ | 5 $\frac{1}{4}$ | 2 $\frac{1}{2}$ | | 4 | 1 $\frac{3}{4}$ |
| | 20 | 20 $\frac{1}{2}$ | 18 $\frac{3}{16}$ | 13 $\frac{1}{2}$ | 4 $\frac{1}{2}$ | 4 $\frac{3}{16}$ | 5 $\frac{1}{4}$ | 2 $\frac{1}{2}$ | | 4 | 1 $\frac{1}{2}$ |
| Two Column * SAXON * VICTORIA and REGINA | 45 | 44 $\frac{13}{16}$ | 43 $\frac{1}{2}$ | 39 $\frac{1}{2}$ | 4 | 7 $\frac{3}{8}$ | 8 $\frac{1}{4}$ | 2 $\frac{1}{2}$ | 3 $\frac{1}{4}$ | 3 $\frac{1}{2}$ | 5 |
| | 38 | 38 $\frac{5}{8}$ | 36 $\frac{3}{8}$ | 32 $\frac{1}{2}$ | 4 | 7 $\frac{3}{8}$ | 8 $\frac{1}{4}$ | 2 $\frac{1}{2}$ | 3 $\frac{1}{4}$ | 3 $\frac{1}{2}$ | 4 |
| | 32 | 32 $\frac{1}{4}$ | 30 $\frac{1}{4}$ | 26 $\frac{5}{8}$ | 4 | 7 $\frac{3}{8}$ | 8 $\frac{1}{4}$ | 2 $\frac{1}{2}$ | 3 $\frac{1}{4}$ | 3 $\frac{1}{2}$ | 3 $\frac{1}{2}$ |
| | 30 | 30 $\frac{1}{4}$ | 28 $\frac{3}{4}$ | 24 $\frac{3}{4}$ | 4 | 7 $\frac{3}{8}$ | 8 $\frac{1}{4}$ | 2 $\frac{1}{2}$ | 3 $\frac{1}{4}$ | 3 $\frac{1}{2}$ | 3 |
| | 26 | 26 $\frac{1}{4}$ | 24 $\frac{1}{2}$ | 20 $\frac{3}{4}$ | 4 | 7 $\frac{3}{8}$ | 8 $\frac{1}{4}$ | 2 $\frac{1}{2}$ | 3 $\frac{1}{4}$ | 3 $\frac{1}{2}$ | 2 $\frac{3}{4}$ |
| | 23 | 23 $\frac{1}{4}$ | 21 $\frac{1}{2}$ | 17 $\frac{3}{4}$ | 4 | 7 $\frac{3}{8}$ | 8 $\frac{1}{4}$ | 2 $\frac{1}{2}$ | 3 $\frac{1}{4}$ | 3 $\frac{1}{2}$ | 2 $\frac{1}{4}$ |
| | 20 | 20 $\frac{1}{4}$ | 18 $\frac{1}{2}$ | 14 $\frac{1}{2}$ | 4 | 7 $\frac{3}{8}$ | 8 $\frac{1}{4}$ | 2 $\frac{1}{2}$ | 3 $\frac{1}{4}$ | 3 $\frac{1}{2}$ | 2 |
| Three Colu'n * SAXON * VICTORIA and REGINA | 44 | 43 $\frac{13}{16}$ | 41 $\frac{1}{2}$ | 36 $\frac{23}{16}$ | 4 $\frac{1}{2}$ | 9 | 9 $\frac{1}{4}$ | 2 $\frac{1}{2}$ | 3 $\frac{1}{4}$ | 4 | 6 |
| | 38 | 38 $\frac{5}{8}$ | 35 $\frac{1}{4}$ | 31 $\frac{1}{4}$ | 4 $\frac{1}{2}$ | 9 | 9 $\frac{1}{4}$ | 2 $\frac{1}{2}$ | 3 $\frac{1}{4}$ | 4 | 5 |
| | 32 | 32 $\frac{1}{2}$ | 29 $\frac{1}{4}$ | 25 $\frac{1}{4}$ | 4 $\frac{1}{2}$ | 9 | 9 $\frac{1}{4}$ | 2 $\frac{1}{2}$ | 3 $\frac{1}{4}$ | 4 | 4 $\frac{1}{2}$ |
| | 26 | 26 $\frac{1}{4}$ | 23 $\frac{1}{4}$ | 19 $\frac{3}{4}$ | 4 $\frac{1}{2}$ | 9 | 9 $\frac{1}{4}$ | 2 $\frac{1}{2}$ | 3 $\frac{1}{4}$ | 4 | 3 $\frac{3}{4}$ |
| | 22 | 22 $\frac{1}{4}$ | 19 $\frac{1}{4}$ | 15 $\frac{1}{4}$ | 4 $\frac{1}{2}$ | 9 | 9 $\frac{1}{4}$ | 2 $\frac{1}{2}$ | 3 $\frac{1}{4}$ | 4 | 3 |
| | 18 | 18 $\frac{1}{4}$ | 15 $\frac{1}{4}$ | 11 $\frac{1}{2}$ | 4 $\frac{1}{2}$ | 9 | 9 $\frac{1}{4}$ | 2 $\frac{1}{2}$ | 3 $\frac{1}{4}$ | 4 | 2 $\frac{1}{4}$ |
| Four Column * SAXON * VICTORIA and REGINA | 45 | 46 | 43 $\frac{13}{16}$ | 39 $\frac{5}{16}$ | 4 $\frac{1}{2}$ | 11 $\frac{1}{2}$ | 11 $\frac{3}{4}$ | 3 | 3 $\frac{1}{4}$ | 4 | 10 |
| | 38 | 38 $\frac{1}{2}$ | 36 $\frac{1}{2}$ | 32 | 4 $\frac{1}{2}$ | 11 $\frac{1}{2}$ | 11 $\frac{3}{4}$ | 3 | 3 $\frac{1}{4}$ | 4 | 8 |
| | 32 | 32 $\frac{1}{2}$ | 30 $\frac{1}{2}$ | 26 | 4 $\frac{1}{2}$ | 11 $\frac{1}{2}$ | 11 $\frac{3}{4}$ | 3 | 3 $\frac{1}{4}$ | 4 | 6 $\frac{1}{2}$ |
| | 26 | 26 $\frac{1}{2}$ | 24 $\frac{1}{2}$ | 20 | 4 $\frac{1}{2}$ | 11 $\frac{1}{2}$ | 11 $\frac{3}{4}$ | 3 | 3 $\frac{1}{4}$ | 4 | 5 |
| | 22 | 22 $\frac{1}{2}$ | 20 $\frac{1}{2}$ | 16 | 4 $\frac{1}{2}$ | 11 $\frac{1}{2}$ | 11 $\frac{3}{4}$ | 3 | 3 $\frac{1}{4}$ | 4 | 4 |
| | 20 | 20 $\frac{1}{2}$ | 18 $\frac{1}{2}$ | 14 | 4 $\frac{1}{2}$ | 11 $\frac{1}{2}$ | 11 $\frac{3}{4}$ | 3 | 3 $\frac{1}{4}$ | 4 | 3 $\frac{1}{2}$ |
| | 18 | 18 $\frac{1}{2}$ | 16 $\frac{1}{2}$ | 12 | 4 $\frac{1}{2}$ | 11 $\frac{1}{2}$ | 11 $\frac{3}{4}$ | 3 | 3 $\frac{1}{4}$ | 4 | 3 |

NOTE.—Items marked * no longer manufactured or carried in stock, but repairs can be furnished.

Safford Radiators



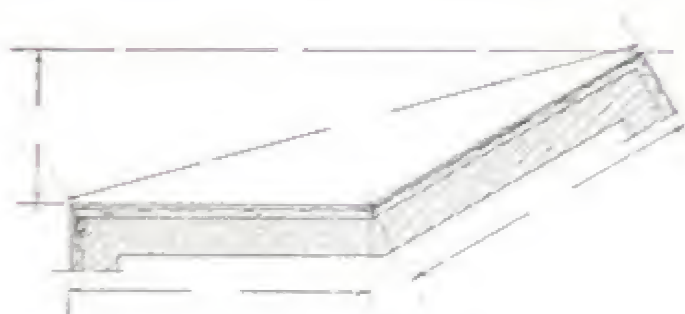
Measurements of Radiators.

| Name | Catalogue Height | A | B | C | D | E | F | G | H | I | Heating Surface Sq. Ft. |
|--|------------------|--------------------|--------------------|--------------------|-----------------|-------------------|-------------------|-----------------|-----------------|-----------------|-------------------------|
| Four Column DAISY and *FAVORITE | 42 | 42 $\frac{25}{32}$ | 40 $\frac{7}{16}$ | 36 $\frac{1}{32}$ | 4 | 8 $\frac{9}{32}$ | 8 $\frac{1}{2}$ | 4 $\frac{1}{8}$ | 3 $\frac{1}{4}$ | 3 $\frac{1}{2}$ | 9 $\frac{2}{3}$ |
| | 38 | 38 $\frac{25}{64}$ | 36 $\frac{1}{16}$ | 32 $\frac{1}{4}$ | 4 | 8 $\frac{9}{32}$ | 8 $\frac{1}{2}$ | 4 $\frac{1}{8}$ | 3 $\frac{1}{4}$ | 3 $\frac{1}{2}$ | 8 |
| | 32 | 32 $\frac{13}{32}$ | 30 $\frac{5}{16}$ | 26 $\frac{9}{32}$ | 4 | 8 $\frac{9}{32}$ | 8 $\frac{1}{2}$ | 4 $\frac{1}{8}$ | 3 $\frac{1}{4}$ | 3 $\frac{1}{2}$ | 6 $\frac{2}{3}$ |
| | 26 | 26 $\frac{11}{16}$ | 24 $\frac{3}{8}$ | 20 $\frac{9}{16}$ | 4 | 8 $\frac{9}{32}$ | 8 $\frac{1}{2}$ | 4 $\frac{1}{8}$ | 3 $\frac{1}{4}$ | 3 $\frac{1}{2}$ | 5 $\frac{1}{3}$ |
| | 20 | 20 $\frac{23}{32}$ | 18 $\frac{1}{32}$ | 14 $\frac{11}{16}$ | 4 | 8 $\frac{9}{32}$ | 8 $\frac{1}{2}$ | 4 $\frac{1}{8}$ | 3 $\frac{1}{4}$ | 3 $\frac{1}{2}$ | 4 |
| | 16 | 16 $\frac{3}{8}$ | 14 $\frac{15}{64}$ | 10 $\frac{5}{16}$ | 4 | 8 $\frac{9}{32}$ | 8 $\frac{1}{2}$ | 4 $\frac{1}{8}$ | 3 $\frac{1}{4}$ | 3 $\frac{1}{2}$ | 2 $\frac{1}{2}$ |
| *IDEAL FLUE | 42 | 42 $\frac{25}{32}$ | 40 $\frac{15}{32}$ | 34 $\frac{37}{64}$ | 5 $\frac{7}{8}$ | 8 $\frac{21}{32}$ | 8 $\frac{21}{32}$ | 3 | 3 $\frac{1}{4}$ | 5 $\frac{3}{8}$ | 8 $\frac{1}{4}$ |
| | 38 | 38 $\frac{25}{64}$ | 36 $\frac{7}{16}$ | 30 $\frac{31}{64}$ | 5 $\frac{7}{8}$ | 8 $\frac{21}{32}$ | 8 $\frac{21}{32}$ | 3 | 3 $\frac{1}{4}$ | 5 $\frac{3}{8}$ | 7 |
| | 32 | 32 $\frac{5}{16}$ | 30 $\frac{23}{64}$ | 24 $\frac{33}{64}$ | 5 $\frac{7}{8}$ | 8 $\frac{21}{32}$ | 8 $\frac{21}{32}$ | 3 | 3 $\frac{1}{4}$ | 5 $\frac{3}{8}$ | 5 $\frac{3}{4}$ |
| | 26 | 26 $\frac{25}{64}$ | 24 $\frac{29}{64}$ | 18 $\frac{21}{32}$ | 5 $\frac{7}{8}$ | 8 $\frac{21}{32}$ | 8 $\frac{21}{32}$ | 3 | 3 $\frac{1}{4}$ | 5 $\frac{3}{8}$ | 4 $\frac{1}{2}$ |
| | 20 | 20 $\frac{11}{16}$ | 18 $\frac{11}{16}$ | 12 $\frac{47}{64}$ | 5 $\frac{7}{8}$ | 8 $\frac{21}{32}$ | 8 $\frac{21}{32}$ | 3 | 3 $\frac{1}{4}$ | 5 $\frac{3}{8}$ | 3 $\frac{1}{4}$ |
| Two Column *FAVORITE and *DAISY | 38 | 38 $\frac{7}{16}$ | 36 $\frac{19}{32}$ | 32 $\frac{29}{32}$ | 3 $\frac{3}{4}$ | 5 | 6 $\frac{1}{2}$ | 3 $\frac{1}{2}$ | 3 $\frac{1}{4}$ | 3 $\frac{1}{4}$ | 4 |
| | 32 | 32 $\frac{9}{16}$ | 30 $\frac{25}{32}$ | 27 $\frac{1}{8}$ | 3 $\frac{3}{4}$ | 5 | 6 $\frac{1}{2}$ | 3 $\frac{1}{2}$ | 3 $\frac{1}{4}$ | 3 $\frac{1}{4}$ | 3 $\frac{1}{3}$ |
| | 26 | 26 $\frac{1}{4}$ | 24 $\frac{3}{8}$ | 20 $\frac{9}{16}$ | 3 $\frac{3}{4}$ | 5 | 6 $\frac{1}{2}$ | 3 $\frac{1}{2}$ | 3 $\frac{1}{4}$ | 3 $\frac{1}{4}$ | 2 $\frac{2}{3}$ |
| | 20 | 20 $\frac{1}{4}$ | 18 $\frac{3}{8}$ | 14 $\frac{11}{16}$ | 3 $\frac{3}{4}$ | 5 | 6 $\frac{1}{2}$ | 3 $\frac{1}{2}$ | 3 $\frac{1}{4}$ | 3 $\frac{1}{4}$ | 2 |
| | 16 | 15 $\frac{29}{32}$ | 14 $\frac{1}{32}$ | 10 $\frac{5}{16}$ | 3 $\frac{3}{4}$ | 5 | 6 $\frac{1}{2}$ | 3 $\frac{1}{2}$ | 3 $\frac{1}{4}$ | 3 $\frac{1}{4}$ | 1 $\frac{1}{2}$ |
| Five Column ACME | 20 | 19 $\frac{63}{64}$ | 18 $\frac{7}{32}$ | 15 $\frac{15}{64}$ | 3 | 12 $\frac{3}{4}$ | 12 $\frac{3}{4}$ | 3 | 3 $\frac{1}{4}$ | 2 $\frac{1}{2}$ | 6 |
| | 18 | 18 $\frac{5}{32}$ | 16 $\frac{11}{32}$ | 13 $\frac{13}{32}$ | 3 | 12 $\frac{3}{4}$ | 12 $\frac{3}{4}$ | 3 | 3 $\frac{1}{4}$ | 2 $\frac{1}{2}$ | 5 $\frac{1}{3}$ |
| | 16 | 16 $\frac{9}{64}$ | 14 $\frac{11}{32}$ | 11 $\frac{3}{8}$ | 3 | 12 $\frac{3}{4}$ | 12 $\frac{3}{4}$ | 3 | 3 $\frac{1}{4}$ | 2 $\frac{1}{2}$ | 4 $\frac{2}{3}$ |
| | 14 | 14 $\frac{15}{64}$ | 12 $\frac{13}{32}$ | 9 $\frac{23}{64}$ | 3 | 12 $\frac{3}{4}$ | 12 $\frac{3}{4}$ | 3 | 3 $\frac{1}{4}$ | 2 $\frac{1}{2}$ | 4 |
| | 13 | 13 $\frac{3}{32}$ | 11 $\frac{17}{64}$ | 8 $\frac{3}{8}$ | 3 | 12 $\frac{3}{4}$ | 12 $\frac{3}{4}$ | 3 | 3 $\frac{1}{4}$ | 2 $\frac{1}{2}$ | 3 $\frac{2}{3}$ |
| Six Column REGINA | 20 | 19 $\frac{47}{64}$ | 17 $\frac{11}{16}$ | 14 $\frac{7}{64}$ | 3 $\frac{5}{8}$ | 12 $\frac{1}{8}$ | 12 $\frac{1}{8}$ | 3 | 3 $\frac{1}{4}$ | 3 $\frac{1}{8}$ | 5 |
| | 18 | 17 $\frac{25}{32}$ | 15 $\frac{49}{64}$ | 12 $\frac{1}{8}$ | 3 $\frac{5}{8}$ | 12 $\frac{1}{8}$ | 12 $\frac{1}{8}$ | 3 | 3 $\frac{1}{4}$ | 3 $\frac{1}{8}$ | 4 $\frac{1}{4}$ |
| | 16 | 15 $\frac{3}{4}$ | 13 $\frac{3}{4}$ | 10 $\frac{1}{8}$ | 3 $\frac{5}{8}$ | 12 $\frac{1}{8}$ | 12 $\frac{1}{8}$ | 3 | 3 $\frac{1}{4}$ | 3 $\frac{1}{8}$ | 3 $\frac{3}{4}$ |
| | 14 | 13 $\frac{3}{4}$ | 11 $\frac{3}{4}$ | 8 $\frac{1}{8}$ | 3 $\frac{5}{8}$ | 12 $\frac{1}{8}$ | 12 $\frac{1}{8}$ | 3 | 3 $\frac{1}{4}$ | 3 $\frac{1}{8}$ | 3 $\frac{1}{4}$ |
| | 13 | 12 $\frac{3}{4}$ | 10 $\frac{3}{4}$ | 8 $\frac{1}{8}$ | 3 $\frac{5}{8}$ | 12 $\frac{1}{8}$ | 12 $\frac{1}{8}$ | 3 | 3 $\frac{1}{4}$ | 3 $\frac{1}{8}$ | 3 |

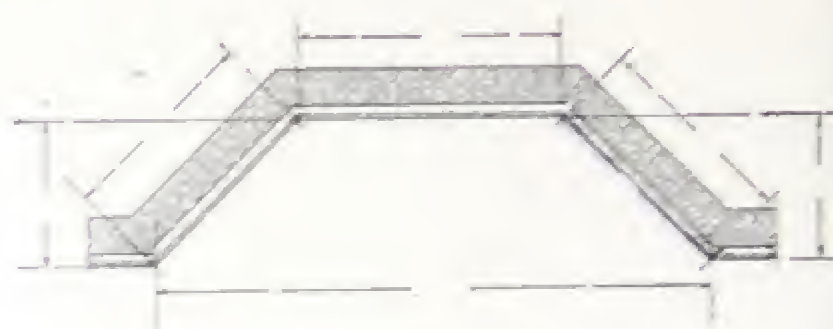
NOTE.—Items marked * no longer manufactured or carried in stock, but repairs can be furnished.

Curved, Corner, Angle and Circular Radiators

Cast Special to Order



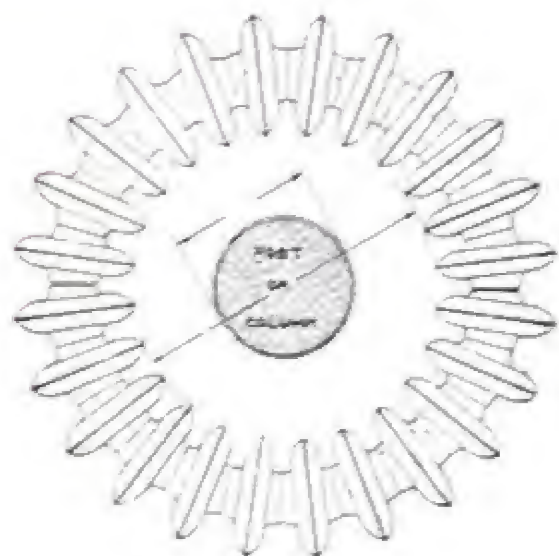
One Angle



Two Angles

Brantford Plant—Peerless—2- 3- and 4-Column all heights. Peerless Window 16'' and 20'' only.

Toronto Plant—Regina—1- 2- 3- and 4-Column in all heights' Regina window all heights.



Circular

Toronto Plant—Regina 1- 2- 3- and 4-Column all heights. Regina window all heights.



Curved

Brantford Plant—2- 3- and 4-Column Peerless, all heights. Peerless window in 16'' and 20'' only.

Toronto Plant—All heights in Regina 1- 2- 3- and 4-Column and Regina window all heights.

It is necessary that a wooden or heavy paper template should accompany orders, giving the measurements along dimension lines.

In furnishing template please state whether measurements have been taken from the plastered wall, or whether allowance has been made for baseboard and shoe. Template should show distinctly on which end the supply leg is to be placed. State whether single or twin connection tappings are desired.

SPECIAL NOTE.—In ordering state whether templates are to be completely filled up with sections or otherwise. Show extreme points between which Radiator may be placed.

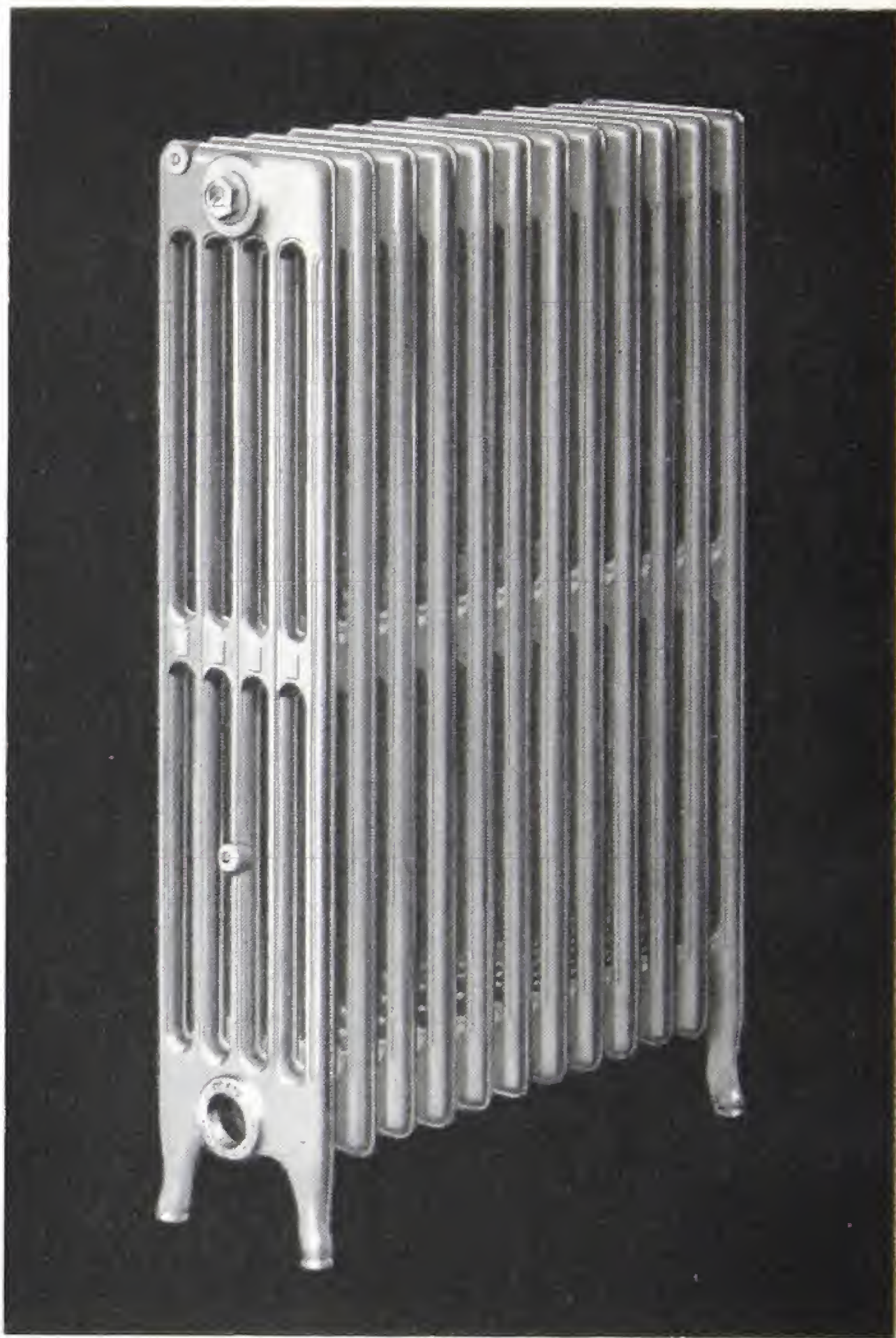
Special Products

THE Special Products shown on the following pages—154 to 163 inclusive—are imported, being manufactured in the United States by the American Radiator Co., and are not carried in stock; therefore when any of these goods are ordered, they are not subject to cancellation or return.

Owing to fluctuations of Exchange and other conditions, prices are given on application only and when so given are subject to withdrawal without notice should prices in the United States change before date of shipment.

Corto Radiator

For Steam or Water



Measurements and Tappings see pages 155 and 156.

Not made with **Twin** connection.

Imported product. Not carried in stock. Orders when accepted are not subject to cancellation or return.

Prices on application. See page 153.

Corto Radiators

For Steam or Water

| No. of Sections | * Length 2 in. per Sec. | HEATING SURFACE—SQUARE FEET | | | | | |
|-----------------------|----------------------------------|--|--|--|--|--|---|
| | | 38-in. Height 4 ½ Sq. Ft. per Sec. | 34 ½-in. Height 4 Sq. Ft. per Sec. | 31-in. Height 3 ½ Sq. Ft. per Sec. | 27-in. Height 3 Sq. Ft. per Sec. | 23-in. Height 2 ½ Sq. Ft. per Sec. | 19 ½-in. Height. 2 Sq. Ft. per Sec. |
| 2 | 4 | 9 | 8 | 7 | 6 | 5 | 4 |
| 3 | 6 | 13 ½ | 12 | 10 ½ | 9 | 7 ½ | 6 |
| 4 | 8 | 18 | 16 | 14 | 12 | 10 | 8 |
| 5 | 10 | 22 ½ | 20 | 17 ½ | 15 | 12 ½ | 10 |
| 6 | 12 | 27 | 24 | 21 | 18 | 15 | 12 |
| 7 | 14 | 31 ½ | 28 | 24 ½ | 21 | 17 ½ | 14 |
| 8 | 16 | 36 | 32 | 28 | 24 | 20 | 16 |
| 9 | 18 | 40 ½ | 36 | 31 ½ | 27 | 22 ½ | 18 |
| 10 | 20 | 45 | 40 | 35 | 30 | 25 | 20 |
| 11 | 22 | 49 ½ | 44 | 38 ½ | 33 | 27 ½ | 22 |
| 12 | 24 | 54 | 48 | 42 | 36 | 30 | 24 |
| 13 | 26 | 58 ½ | 52 | 45 ½ | 39 | 32 ½ | 26 |
| 14 | 28 | 63 | 56 | 49 | 42 | 35 | 28 |
| 15 | 30 | 67 ½ | 60 | 52 ½ | 45 | 37 ½ | 30 |
| 16 | 32 | 72 | 64 | 56 | 48 | 40 | 32 |
| 17 | 34 | 76 ½ | 68 | 59 ½ | 51 | 42 ½ | 34 |
| 18 | 36 | 81 | 72 | 63 | 54 | 45 | 36 |
| 19 | 38 | 85 ½ | 76 | 66 ½ | 57 | 47 ½ | 38 |
| 20 | 40 | 90 | 80 | 70 | 60 | 50 | 40 |
| 21 | 42 | 94 ½ | 84 | 73 ½ | 63 | 52 ½ | 42 |
| 22 | 44 | 99 | 88 | 77 | 66 | 55 | 44 |
| 23 | 46 | 103 ½ | 92 | 80 ½ | 69 | 57 ½ | 46 |
| 24 | 48 | 108 | 96 | 84 | 72 | 60 | 48 |
| 25 | 50 | 112 ½ | 100 | 87 ½ | 75 | 62 ½ | 50 |

Tappings: 1 ½ inches top and bottom and bushed for water; and 2 inches at bottom only and bushed for steam.

Connections: Extra-heavy right and left threaded nipples.

Measurements: For center of tappings to floors, and between centres of upper and lower water tappings, exact heights and widths, etc., see page 156.

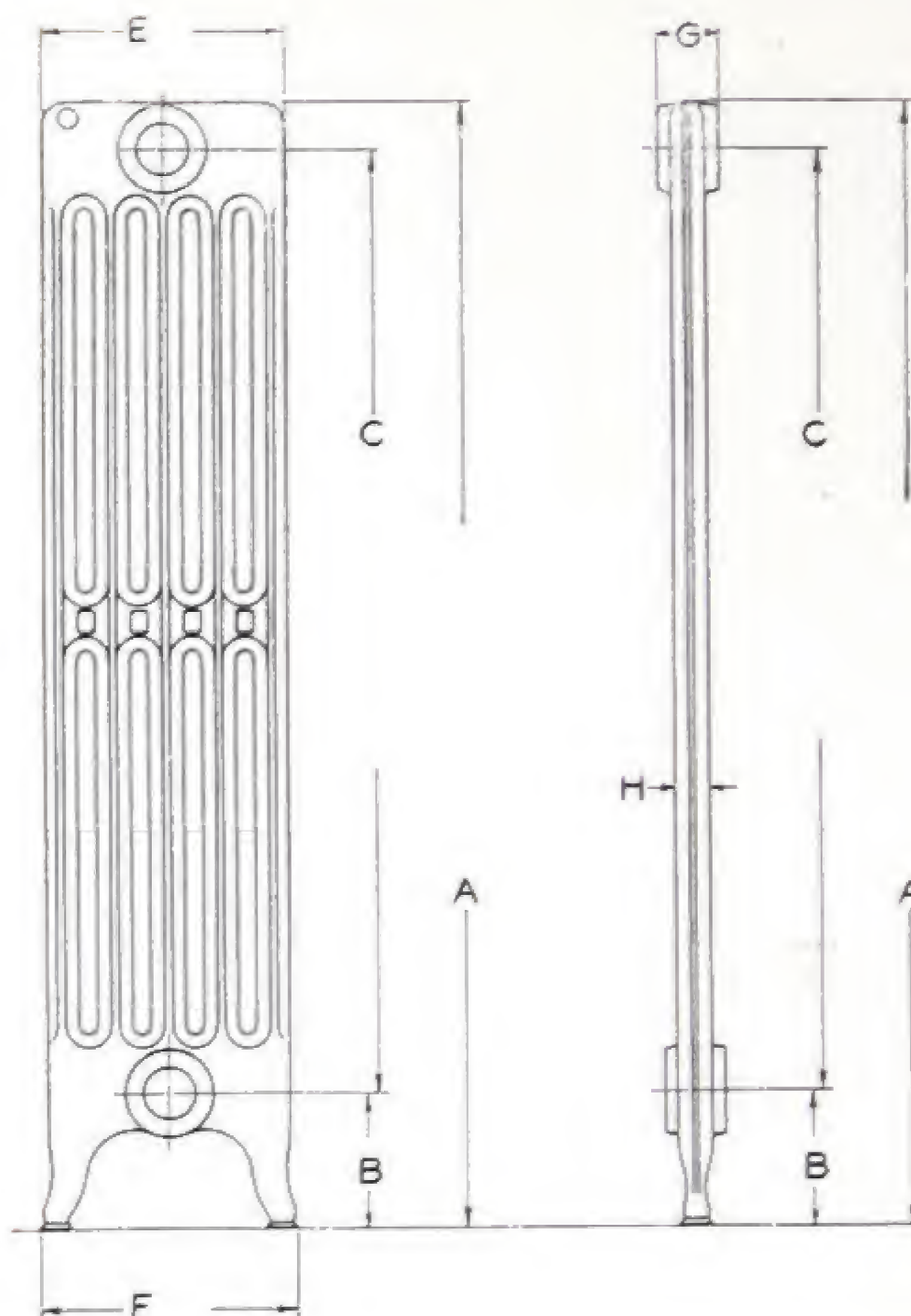
*Add ½ inch to length for each bushing.

Corto Radiators are furnished, upon special order, with 6-inch legs or legless.

Imported Product. Not carried in stock. Orders when accepted are not subject to cancellation or return. Prices on application. See page 153.

Corto Radiator

For Steam or Water



- A. Total height.
 B. Distance from floor to centre of tapping.
 C. Distance from centre of top to centre of bottom opening of sections.
 E. Width of sections.
 F. Width at feet.
 G. Distance from centre to centre of sections.
 H. Width of column.
 Not made with Twin Connection.

Measurements and Tappings

| Heating Surface per Section | A Inches | B Inches | C Inches | E Inches | F Inches | G Inches | H Inches |
|-----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 4 1/2 ft. | 37 5/8 | 4 1/2 | 31 7/16 | 8 | 8 3/8 | 2 | 1 1/8 |
| 4 ft. | 34 3/8 | 4 1/2 | 28 3/16 | 8 | 8 3/8 | 2 | 1 1/8 |
| 3 1/2 ft. | 30 5/8 | 4 1/2 | 24 7/16 | 8 | 8 3/8 | 2 | 1 1/8 |
| 3 ft. | 26 5/8 | 4 1/2 | 20 8/16 | 8 | 8 3/8 | 2 | 1 1/8 |
| 2 1/2 ft. | 23 | 4 1/2 | 16 3/4 | 8 | 8 3/8 | 2 | 1 1/8 |
| 2 ft. | 19 1/8 | 4 1/2 | 12 1/4 | 8 | 8 3/8 | 2 | 1 1/8 |

Distance from bottom of hub to floor, on centre sections of radiators is approximately 3 1/16 inches.

Imported Product. Not carried in stock. Orders when accepted are not subject to cancellation or return.

Prices on application. See page 153.

Extra High Solid Legs

Not Carried in Stock
Cast Special to Order

The types of Radiators for which High Legs are furnished are as follows:

Brantford Plant: High Legs measuring six inches only can be furnished on the following types and for which no additional charge is made: Peerless Two-, Three-, and Four-Column in all heights of Radiators except 45 inch.

Toronto Plant: Regina Pattern, One-, Two-, Three- and Four-Column, and Saxon Hospital Two-, Three- and Four-Column in all heights can be furnished in six, six and one-half, seven, seven and one-half and eight inch High Legs and Stock Legs. No extra charge for six inch Legs. For additional charge on other heights and Stock Legs, see current Radiator Discount Sheet.

Ideal Arcola Heater

One of the world's newest and greatest of inventions. It is unique—being both a boiler and a radiator. Takes the place of a parlor stove, and distributes the excess heat through connecting PEERLESS Radiators stationed in adjoining rooms. The Arcola may be painted or enameled in any shade or color to match woodwork or decorations. It is not obtrusive like a stove but may be painted to harmonize with any furnishings.



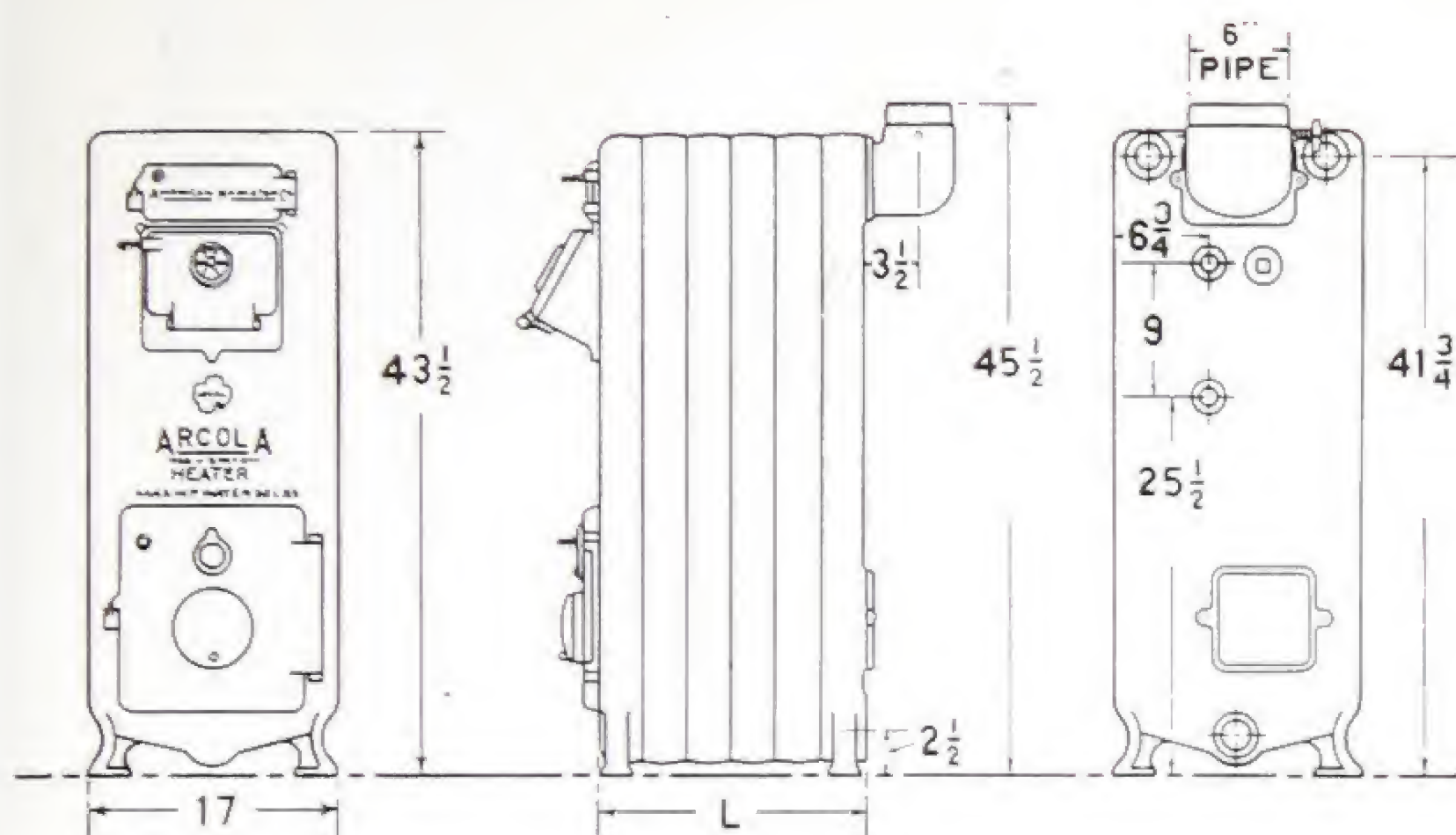
Note the large, slanting fire-door, the tight-fitting doors, and the deep, snug-fitting ash pan of the IDEAL Arcola.

Imported product. Not carried in stock. Orders when accepted are not subject to cancellation or return.

Prices on application. See page 153.

See next page for measurements.

Ideal Arcola Heater



| Heater Number | Number of Sections | Capacity of Heater Sq. Ft.* | Rating Sq. Ft. | Radiating Surface of Heater Sq. Ft. | Length "L" Inches | Approximate Shp'g Weight |
|---------------|--------------------|-----------------------------|----------------|-------------------------------------|-------------------|--------------------------|
| 4-H | 4 | 150 | 200 | 45 | 12 | 445 |
| 5-H | 5 | 225 | 300 | 50 | 15 | 515 |
| 6-H | 6 | 300 | 400 | 55 | 18 | 585 |
| 7-H | 7 | 375 | 500 | 60 | 21 | 655 |
| 8-H | 8 | 450 | 600 | 65 | 24 | 725 |
| 9-H | 9 | 525 | 700 | 70 | 27 | 795 |

*The capacity of the heater is ample to carry this quantity of radiation when heater is installed on the first floor, or on same floor level as radiators.

Ideal-ARCOLA Heaters are shipped complete in crate with ash pan and firing tools.

Oval smoke pipe connection will take 6 in. diameter smoke pipe.

Flow pipe tapping, two 2-inch (one tapping plugged).

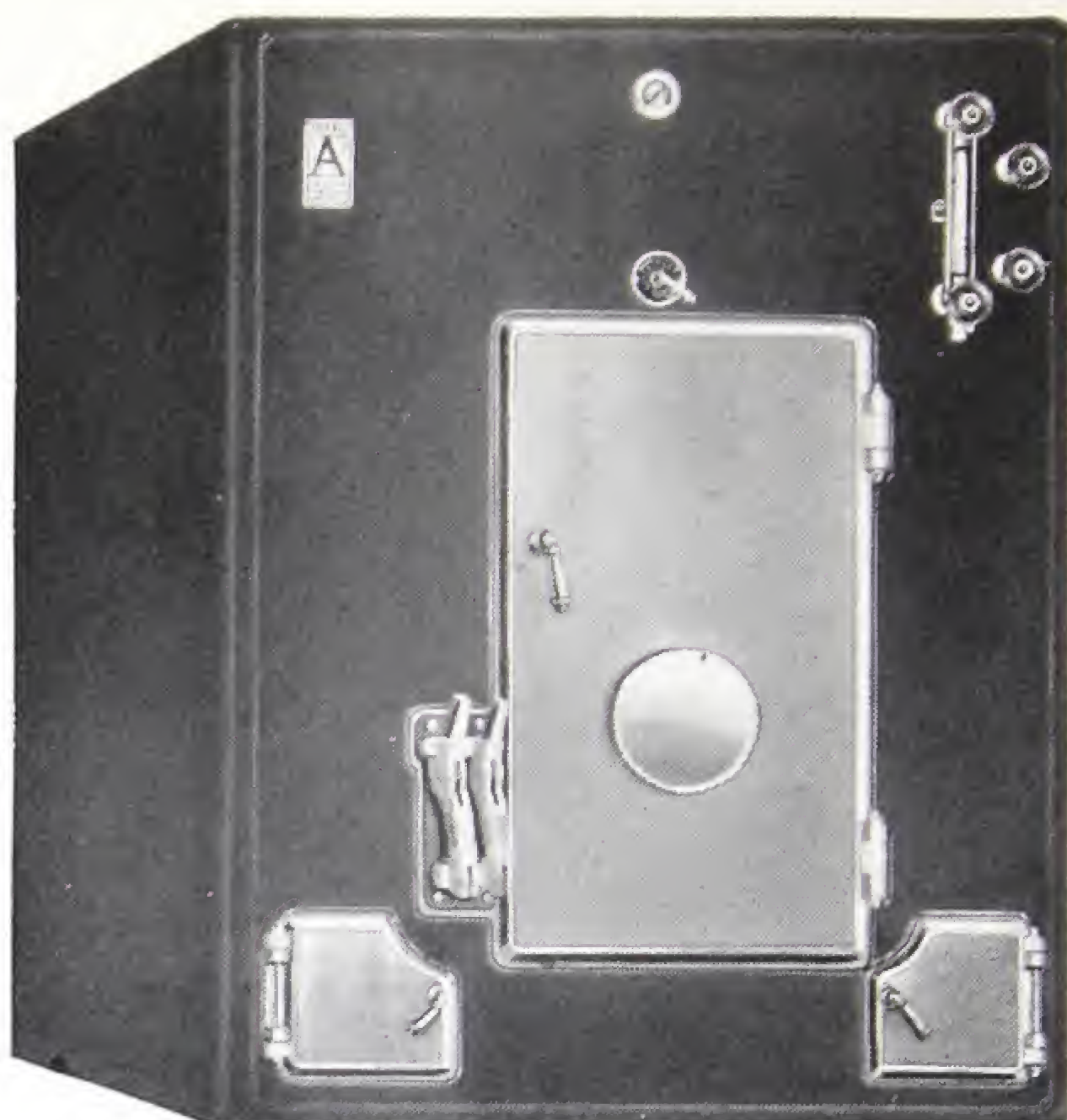
Return pipe tapping, 2 inches.

*In figuring the square feet of radiation required for the room in which the Ideal-ARCOLA Heater stands, allow for the heat given off by the Ideal-ARCOLA, the expansion tank and piping, which combined have an average heating value as given in table.

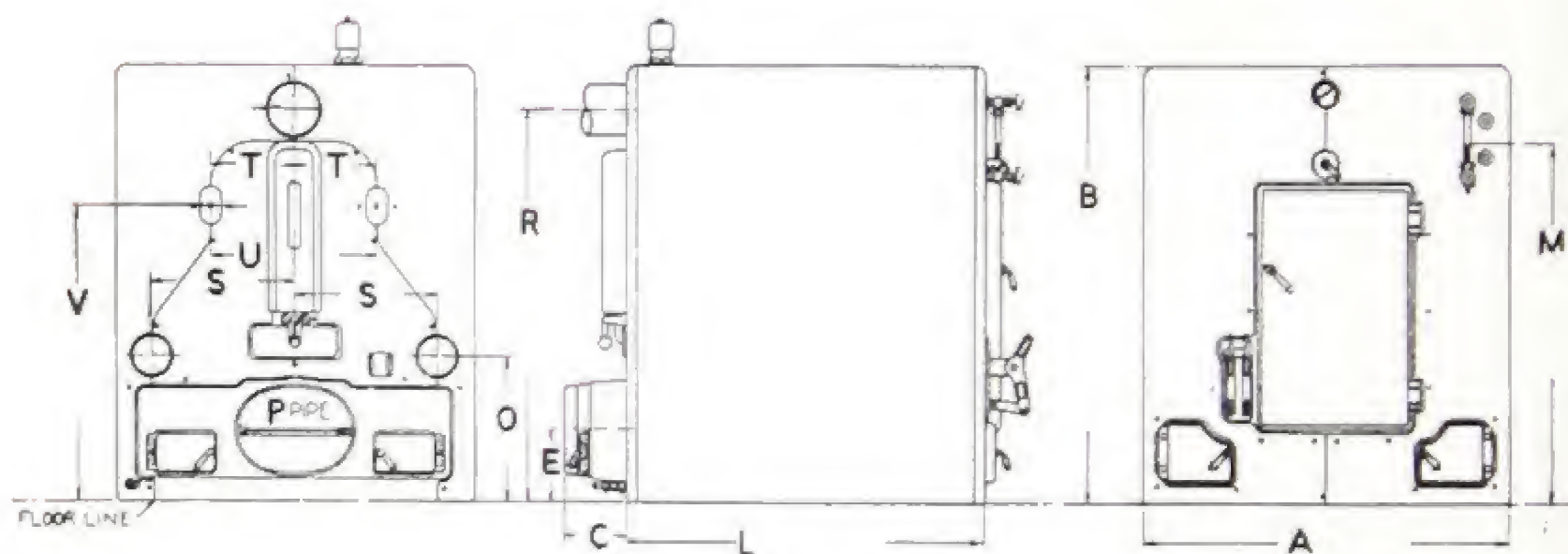
Imported Product. Not carried in stock. Orders when accepted are not subject to cancellation or return.

Prices on application. See page 153.

Ideal Type "A" Heat Machine



For hard coal, coke, oil or gas



Measurements are in Inches

| Boiler | A | B | C | E | O | M | P | R | S | T | U |
|-------------------------|--------|--------|--------|--------|--------|--------|----|--------|--------|--------|--------|
| S or W-2204-A to 2209-A | 41 1/2 | 61 1/4 | 8 1/4 | 8 3/8 | 50 | 19 3/4 | 12 | 56 | 15 1/8 | 9 1/8 | 18 1/4 |
| S or W-3205-A to 3212-A | 57 1/2 | 69 | 10 1/4 | 11 1/8 | 56 3/4 | 23 | 18 | 63 1/8 | 22 7/8 | 13 3/8 | 26 3/4 |

S or W-2204-A to 2209-A. Boiler has 12" Round Smoke Pipe Collar.
S or W-3205-A to 3212-A. Boiler has oval Smoke Pipe Collar for 18" pipe.

Imported Product. Not carried in stock. Orders when accepted are not subject to cancellation or return.

Prices on application. See page 153.

Ideal Type "A" Heat Machine

Ratings and Data

Steam

| Number of Boiler | Rating Sq. Ft. | Grate Area Sq. Ft. | Fuel Capacity Lbs. | Total Length "L" Ins. | Outlets No. and Size | Inlets No. and Size | Chimney Size Ins. | Chimney Height Ft. |
|------------------|----------------|--------------------|--------------------|-----------------------|----------------------|---------------------|-------------------|--------------------|
| S-2204-A.. | 1000 | 2.76 | 245 | 26 | 1-6 | 2-5 | 12x12 | 35 |
| S-2205-A.. | 1250 | 3.68 | 328 | 32 | 1-6 | 2-5 | 12x16 | 35 |
| S-2206-A.. | 1500 | 4.60 | 411 | 38 | 1-6 | 2-5 | 12x16 | 35 |
| S-2207-A.. | 1750 | 5.52 | 494 | 44 | 1-6 | 2-5 | 12x16 | 40 |
| S-2208-A.. | 2000 | 6.44 | 555 | 50 | 1-6 | 2-5 | 12x16 | 45 |
| S-2209-A.. | 2250 | 7.36 | 660 | 56 | 1-6 | 2-5 | 12x16 | 45 |
| S-3205-A.. | 2500 | 6.22 | 660 | 36 | 1-8 | 2-6 | 16x16 | 40 |
| S-3206-A.. | 3000 | 7.77 | 825 | 43 | 1-8 | 2-6 | 16x16 | 40 |
| S-3207-A.. | 3500 | 9.32 | 990 | 50 | 1-8 | 2-6 | 16x20 | 40 |
| S-3208-A.. | 4000 | 10.87 | 1155 | 57 | 1-8 | 2-6 | 16x20 | 45 |
| S-3209-A.. | 4500 | 12.42 | 1320 | 64 | 1-8 | 2-6 | 20x20 | 45 |
| S-3210-A.. | 5000 | 13.97 | 1485 | 71 | 1-8 | 2-6 | 20x20 | 50 |
| S-3211-A.. | 5500 | 15.52 | 1650 | 78 | 1-8 | 2-6 | 20x20 | 50 |
| S-3212-A.. | 6000 | 17.07 | 1815 | 85 | 1-8 | 2-6 | 20x20 | 55 |

Water

| Number of Boiler | Water Rating Sq. Ft. | Grate Area Sq. Ft. | Fuel Capacity Lbs. | Total Length "L" Ins. | Outlets No. and Size | Inlets No. and Size | Chimney Size Ins. | Chimney Height Ft. |
|------------------|----------------------|--------------------|--------------------|-----------------------|----------------------|---------------------|-------------------|--------------------|
| W-2204-A.. | 1600 | 2.76 | 245 | 26 | 1-6 | 2-5 | 12x12 | 35 |
| W-2205-A.. | 2000 | 3.68 | 328 | 32 | 1-6 | 2-5 | 12x16 | 35 |
| W-2206-A.. | 2400 | 4.60 | 411 | 38 | 1-6 | 2-5 | 12x16 | 35 |
| W-2207-A.. | 2800 | 5.52 | 494 | 44 | 1-6 | 2-5 | 12x16 | 40 |
| W-2208-A.. | 3200 | 6.44 | 577 | 50 | 1-6 | 2-5 | 12x16 | 45 |
| W-2209-A.. | 3600 | 7.36 | 660 | 56 | 1-6 | 2-5 | 12x16 | 45 |
| W-3205-A.. | 4000 | 6.22 | 660 | 36 | 1-8 | 2-6 | 16x16 | 40 |
| W-3206-A.. | 4800 | 7.77 | 825 | 43 | 1-8 | 2-6 | 16x16 | 40 |
| W-3207-A.. | 5600 | 9.32 | 990 | 50 | 1-8 | 2-6 | 16x20 | 40 |
| W-3208-A.. | 6400 | 10.87 | 1155 | 57 | 1-8 | 2-6 | 16x20 | 45 |
| W-3209-A.. | 7200 | 12.42 | 1320 | 64 | 1-8 | 2-6 | 20x20 | 45 |
| W-3210-A.. | 8000 | 13.97 | 1485 | 71 | 1-8 | 2-6 | 20x20 | 50 |
| W-3211-A.. | 8800 | 15.52 | 1650 | 78 | 1-8 | 2-6 | 20x20 | 50 |
| W-3212-A.. | 9600 | 17.07 | 1815 | 85 | 1-8 | 2-6 | 20x20 | 55 |

Boiler Equipment

STEAM BOILER—IDEAL asbestos-lined Metal Jacket, Arco Automatic Steam Regulator, Pop Safety Valve, Steam Gauges, Water Column and Trimmings, Tri-cocks, Draw-off Cock and Firing Tools.

WATER BOILER—IDEAL asbestos-lined Metal Jacket, Arco Automatic Temperature Regulator, Thermometer, Altitude Gauge, Draw-off Cock and Firing Tools.

Ideal Type "A" Heat Machine

1-A Series



For hard coal, coke, oil and gas

Trimming, page 163.

Imported product. Not carried in stock. Orders when accepted are not subject to cancellation or return.

Prices on application. See page 153.

See next page for ratings and measurements.

Ideal Type "A" Heat Machine

Ratings and Dimensions

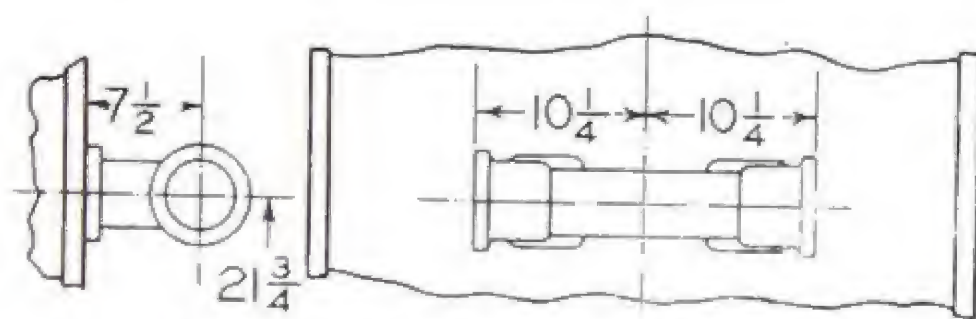
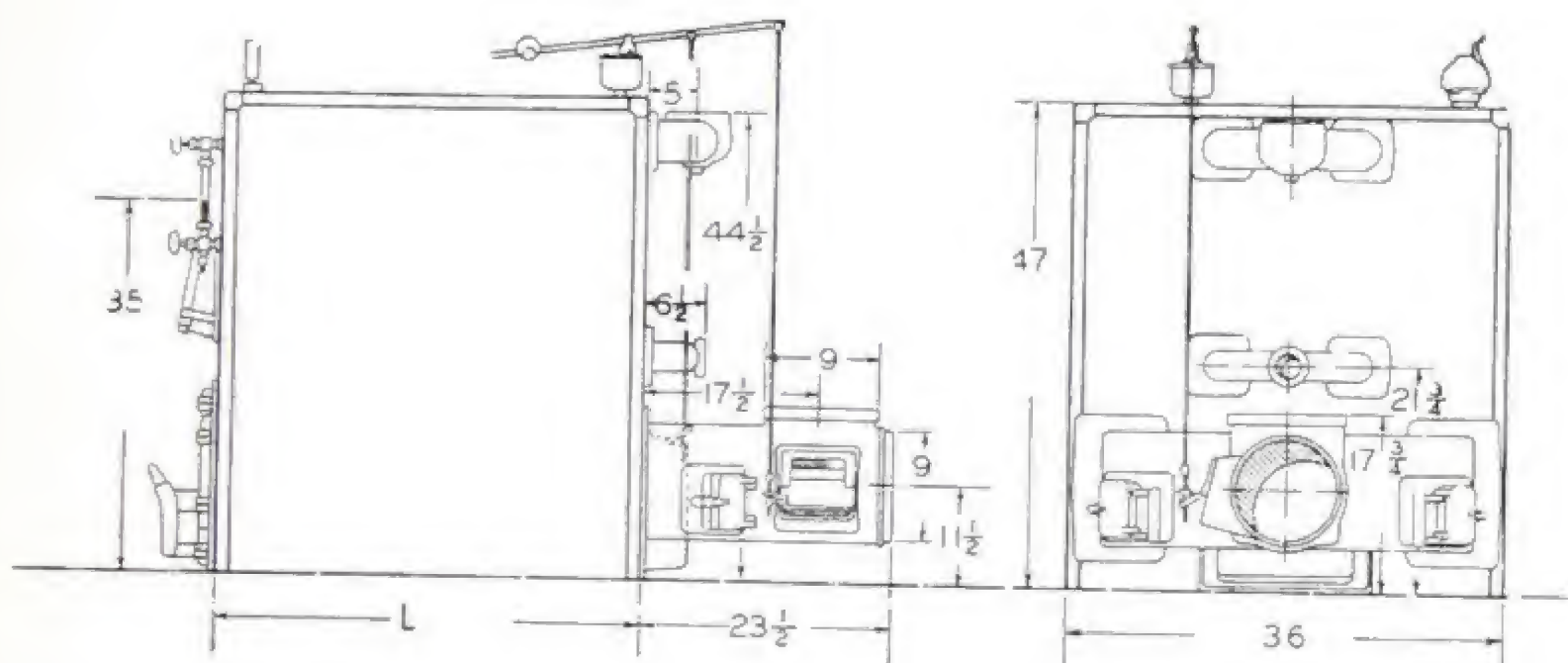
1-A Series

Steam

| Num- ber of | Rating | Grate Area Sq. Ft. | Total Length "L" Inches | Hard Coal Fuel Capacity Lbs. | Outlet No and Size | Inlet No. and Size | Chimney Size (Sea Level) Inches | Chimney Height Feet |
|-------------------|--------|--------------------------|----------------------------------|--|-----------------------------|-----------------------------|--|---------------------------|
| 1-A-4 | 450 | 1.9 | 22 | 126 | 1-4 | 1-2 | 8x12 | 30 |
| 1-A-5 | 600 | 2.5 | 27 1/2 | 168 | 1-4 | 1-2 | 8x12 | 35 |
| 1-A-6 | 750 | 3.1 | 33 | 210 | 1-4 | 1-2 | 8x12 | 35 |
| 1-A-7 | 900 | 3.7 | 38 1/2 | 252 | 1-4 | 1-2 | 8x12 | 40 |

Water

| | | | | | | | | |
|--------|------|-----|--------|-----|-----|-----|------|----|
| 1-A-40 | 750 | 1.9 | 22 | 126 | 1-4 | 2-4 | 8x12 | 30 |
| 1-A-50 | 1000 | 2.5 | 27 1/2 | 168 | 1-4 | 2-4 | 8x12 | 35 |
| 1-A-60 | 1250 | 3.1 | 33 | 210 | 1-4 | 2-4 | 8x12 | 35 |
| 1-A-70 | 1500 | 3.7 | 38 1/2 | 252 | 1-4 | 2-4 | 8x12 | 40 |



RETURN HEADER FOR WATER BOILERS

Fire Door Dimensions—14 1/2 x 9 Inches

Equipment

IDEAL Asbestos-lined Metal Jacket.

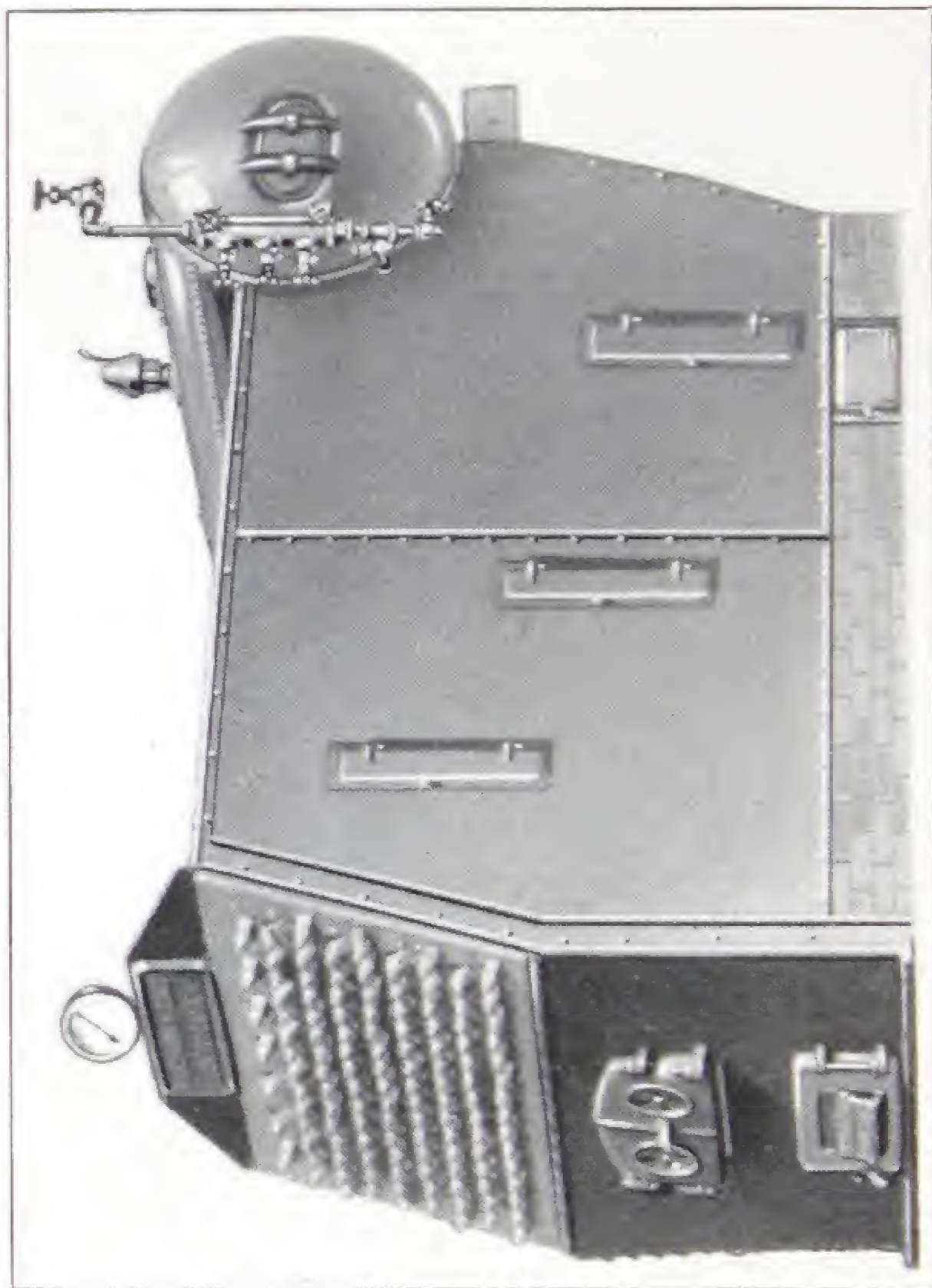
Two solid brass Draw-off Cocks and Firing Tools supplied with all Boilers.

Steam Boiler

Automatic Damper Regulator.

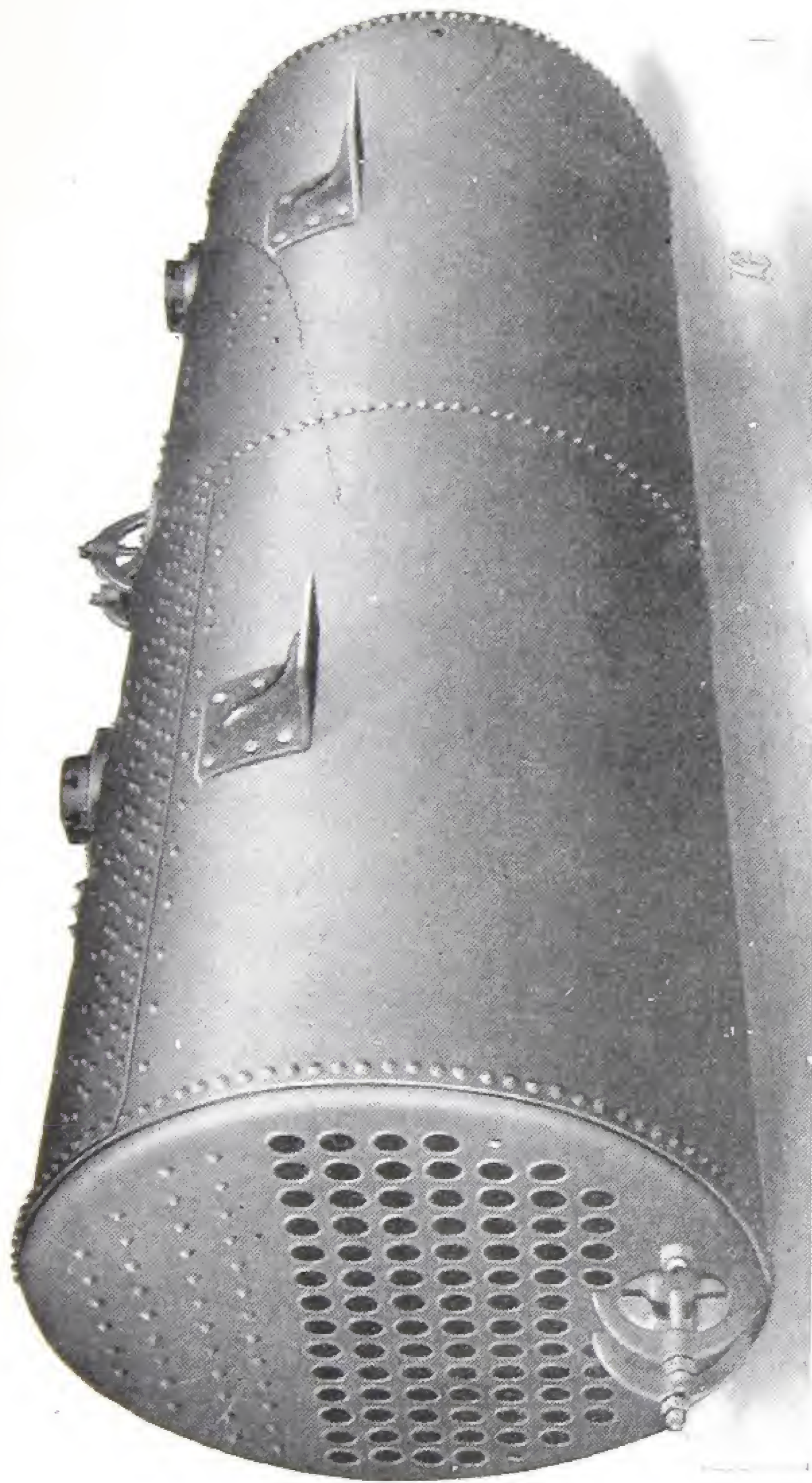
Extra heavy Water Column and Tri-Cocks. 4 1/2" IDEAL Steam Gauge.

Water Tube Low Pressure Steam Boiler



Made in many sizes. Prices on application

Tubular Low Pressure Steam Boiler



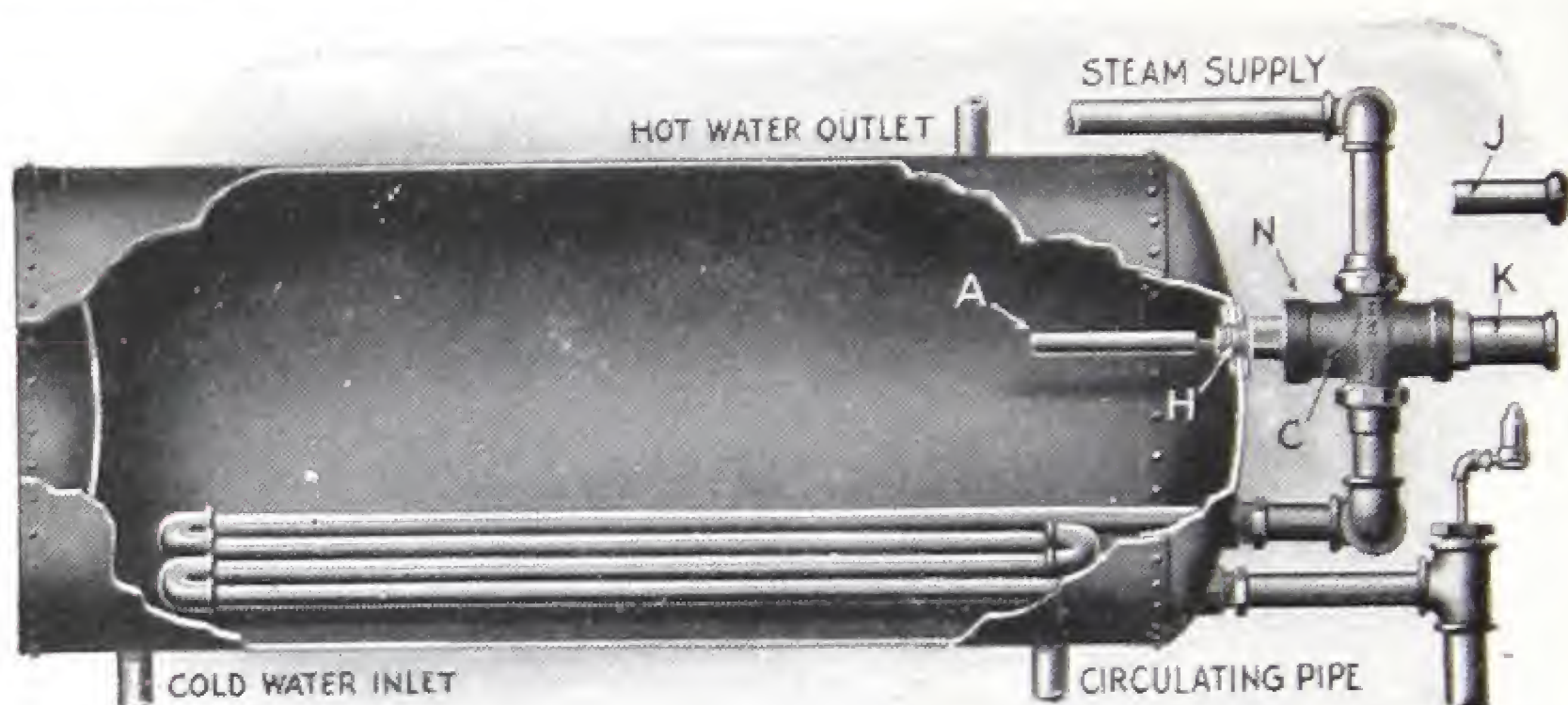
From 200 to 2000 sq. ft. capacity. Prices on application

Arco Tank Regulator

For automatic regulation of the temperature of any liquid heated by steam

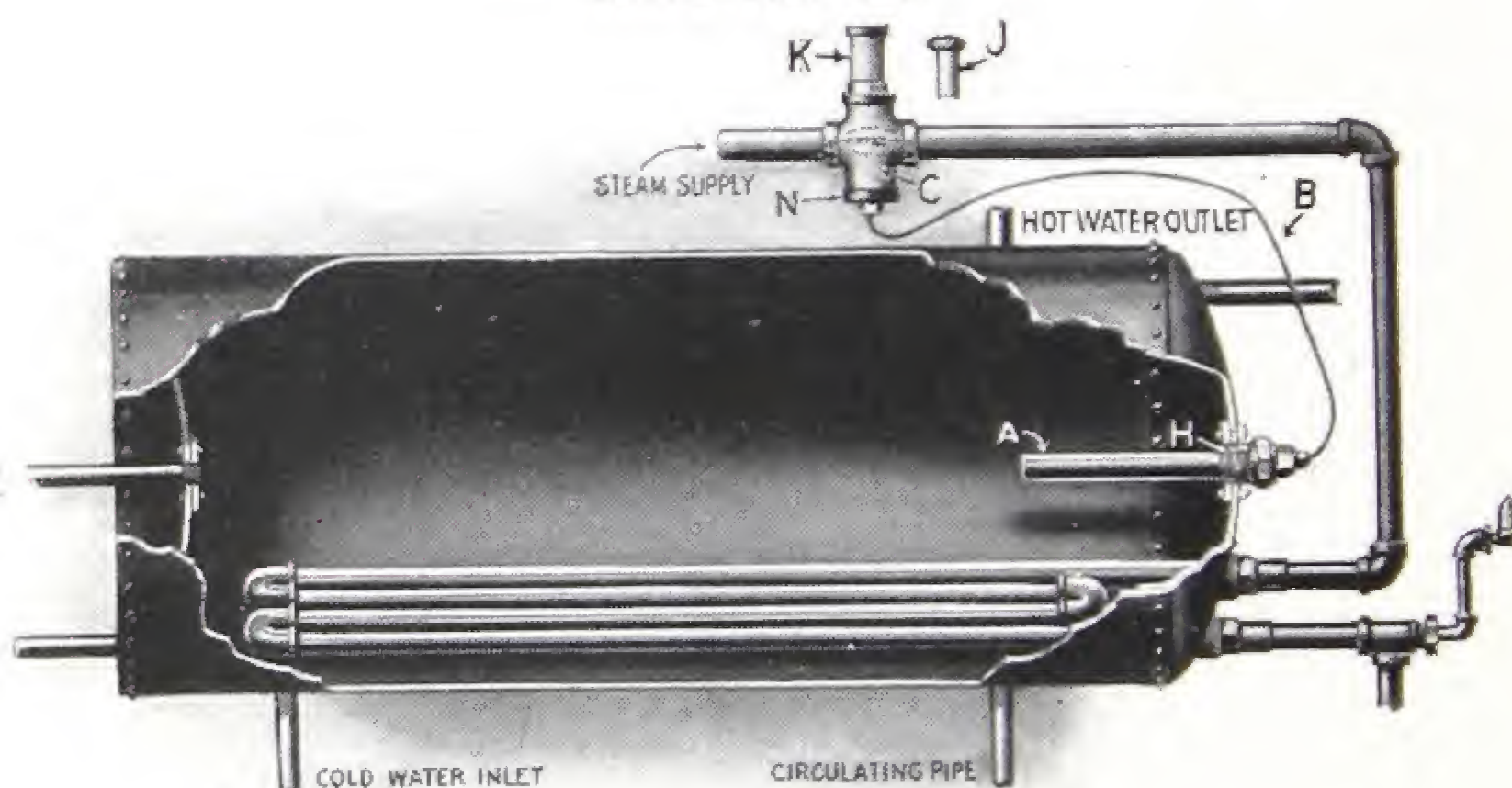
Pressure not to exceed 15 lbs.

The extreme sensitiveness, positive action, and simplicity of this regulator have placed it in a class by itself, and made it applicable in hundreds of ways. No compressed air, electricity, water or auxiliary power necessary. It is operated by a bellows made entirely of brass—one piece—not built up discs. Will last indefinitely. It can be used in hotels, office buildings, schools, hospitals, public institutions, factories of all kinds, bottling works, aquariums, canning factories, chemical laboratories, laundries, on railroad watertanks, sprinkler systems, feed water heaters, pasteurizing machines, vulcanizing machines, suction gas producers, etc.



Direct Connected Type

Stock No. 825



Flexible Tube Type

Stock No. 826

Adjustment for temperature is obtained by a key or wrench, fitting into a shield which keeps the adjustment completely under control.

Temperature range regularly furnished 140°—180°—Fahr. Special temperature range supplied on special order. Flexible tube 8 feet long.

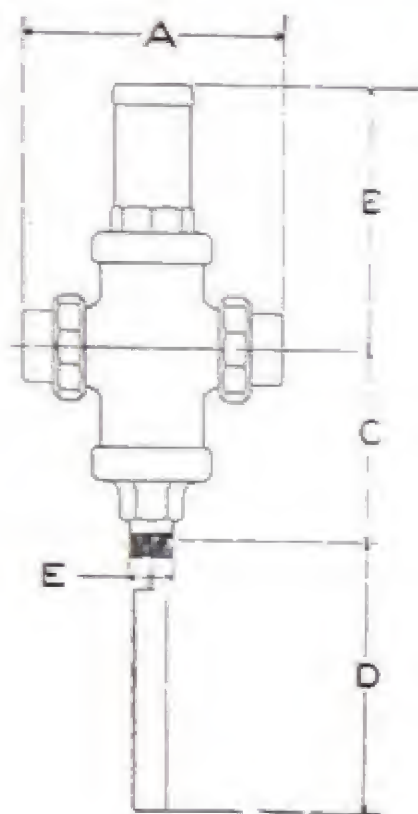
See page 165 for measurements and List Prices.

Arco Tank Regulator

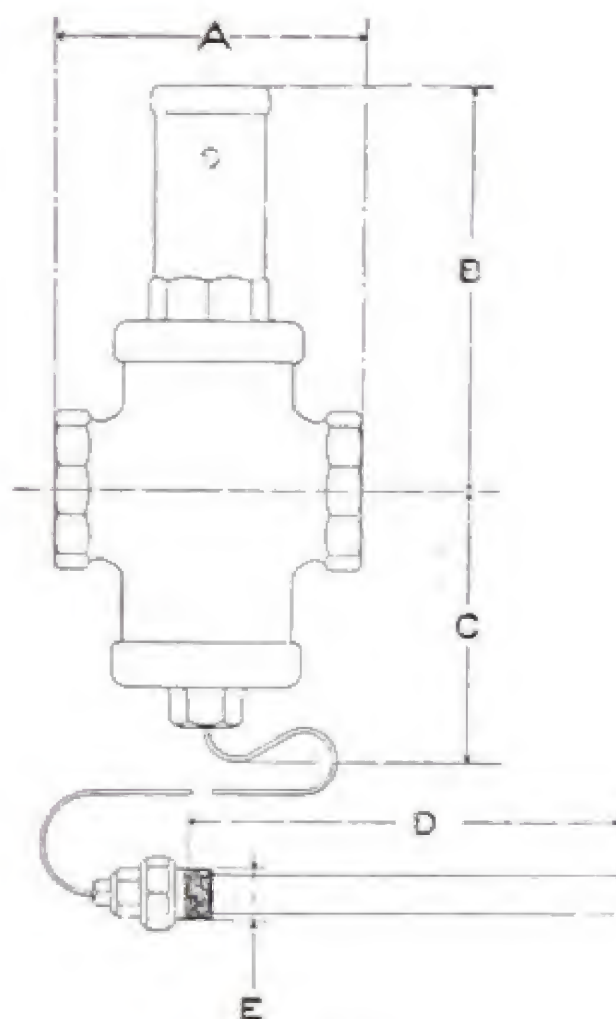
Grouping of Sizes

A novel method of grouping the sizes is provided. Many tests have proven that this design makes possible the use of one regulator for several sizes. For example, size A is used for $\frac{1}{2}$ ", $\frac{3}{4}$ " and 1" pipe connections. It is threaded 1" and sets of bushings are furnished with each regulator for $\frac{3}{4}$ " and $\frac{1}{2}$ ", so that it may be used for any of these three sizes. Size B includes $1\frac{1}{4}$ " and $1\frac{1}{2}$ " pipe connections. Size C, 2" only. Size D, $2\frac{1}{2}$ " and 3". This feature results in a saving to the contractor in case pipe sizes are changed.

Roughing in Dimensions



No. 825



No. 826

| Dimensions in inches | A | B | C | D | E |
|--|-----------------|-------------------|-----------------|-----------------|----------------|
| Size A for $\frac{1}{2}$ ", $\frac{3}{4}$ ", 1" Pipe..... | $7\frac{1}{2}$ | $5\frac{7}{16}$ | $4\frac{7}{8}$ | $6\frac{9}{16}$ | 1 |
| Size B for $1\frac{1}{4}$ " and $1\frac{1}{2}$ " Pipe..... | $8\frac{3}{16}$ | $8\frac{3}{16}$ | $6\frac{1}{16}$ | $8\frac{9}{16}$ | 1 |
| Size C for 2" Pipe..... | $8\frac{3}{4}$ | $8\frac{1}{4}$ | $6\frac{3}{16}$ | $9\frac{1}{8}$ | $1\frac{1}{4}$ |
| Size D for $2\frac{1}{2}$ " and 3" Pipe..... | $9\frac{3}{4}$ | $12\frac{11}{16}$ | $8\frac{5}{16}$ | $15\frac{1}{8}$ | $1\frac{1}{4}$ |

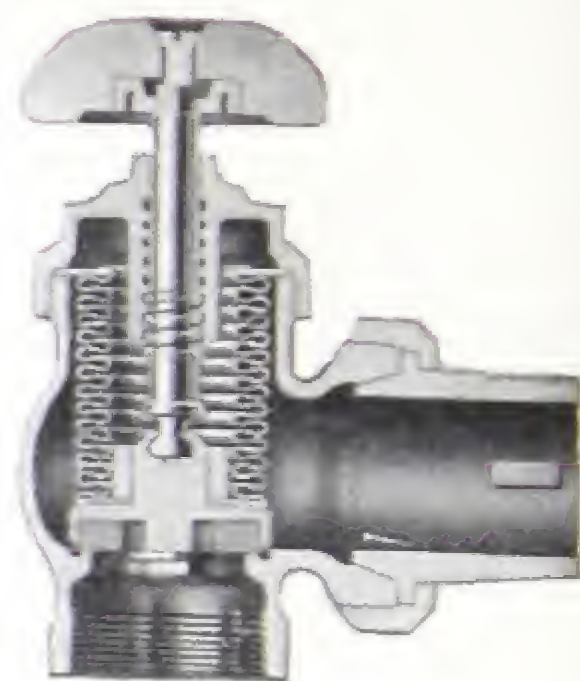
List Prices, Complete with Bushings

| Stock No. | Size | Pipe Conn. | Type | Shipping Weight Pounds | List Price |
|-----------|------|--------------------------------------|------------------------------|------------------------|------------|
| 825 | A | $\frac{1}{2}$ ", $\frac{3}{4}$ ", 1" | Direct Connected with Unions | 20 | \$75.00 |
| 825 | B | $1\frac{1}{4}$ ", $1\frac{1}{2}$ " | Direct Connected with Unions | 25 | 90.00 |
| 826 | A | $\frac{1}{2}$ ", $\frac{3}{4}$ ", 1" | Flexible Tube with Unions... | 20 | 90.00 |
| 826 | B | $1\frac{1}{4}$ ", $1\frac{1}{2}$ " | Flexible Tube with Unions... | 25 | 100.00 |
| 826 | C | 2" | Flexible Tube—Screwed Ends. | 50 | 170.00 |
| 826 | D | $2\frac{1}{2}$ ", 3" | Flexible Tube—Screwed Ends. | 60 | 200.00 |

Ideal Packless Radiator Valves

Patents Pending

Stock No. 850



For Low Pressure Steam or Water Heating

Cannot Leak

Ideal Packless Radiator Valves cannot leak because they are made without packing. In ordinary valves a perishable packing is used around the stem, which wears, as the valve is operated, and allows steam and water to leak out. In the Ideal Packless Radiator Valve a flexible metal bellows is permanently fastened around the stem, expanding and contracting as the valve is opened and closed. This air-, steam- and water-tight shield interposes an everlasting barrier to the passage of steam or water.

Each valve is high nickeled and polished. Handle of black hard rubber finish.

List Prices

With union, composition disc. Rough body—plated all over. Right hand thread both openings.

| Size | $\frac{1}{2}$ " | $\frac{3}{4}$ " | 1" | $1\frac{1}{4}$ " | $1\frac{1}{2}$ " | 2" |
|---------------|-----------------|-----------------|--------|------------------|------------------|---------|
| No. 850 angle | \$5.50 | \$5.50 | \$6.75 | \$7.75 | \$9.50 | \$13.75 |

Arco Steam Regulator

For Damper Control on Steam Heating Boilers

Stock No. 905



An improved type of all-metal pressure regulators for controlling dampers on steam heating boilers. Extreme sensitiveness has been obtained by a new design of rocker movement and by the use of two weights. The operating element is a metallic bellows of our own design and manufacture. It is made from one piece of brass—not built up from discs. The head is an integral part of the bellows, which eliminates the possibilities of leakage at soldered joints. A novel feature of this new design is the steel body and steel rocker. This avoids the expense and annoyance of breakage which frequently occurs where these parts are made of cast iron.

The design is such that the steam pressure is applied to the outside of the bellows. This insures that the bellows expand and contract evenly in all folds. There is no tendency for the bellows to tilt and unduly stretch the metal on one side. This feature insures long life and great sensitiveness.

For steam pressure up to 15 lbs.—finely finished in black baked-on enamel. Connection to boiler, 1 inch I.P.S. male thread. Trimmings furnished; one 36-inch lever, two 4-lb. weights, 12 ft. of chain, two ceiling pulleys, four S-Hooks. Shipping weight, 16 lbs.

Stock No. 905. List price, \$20.00

Arco Water Regulator

For Damper Control on Hot Water Boilers

Stock No. 800



A damper Regulator designed by us for Hot Water Boilers which will control the drafts so as to maintain a constant water temperature at any degree between 100° and 220° Fahr. Damper control on Hot Water Boilers is as necessary as on Steam Boilers. It saves the inconvenience of attending the drafts, gives the comfort of a steady water temperature and saves heavily in fuel by preventing over-heating.

The Arco Water Regulator is made entirely of metal. Within the bulb is an expansible metallic bellows, surrounding which is volatile liquid. As the water temperature in the system increases, the liquid vaporizes and the gas pressure generated thereby compresses the bellows and forces upward the thrust rod or stem which tilts the lever and closes the drafts. As the water cools the gas pressure is relieved and the counterweight opens the drafts. There are no perishable parts to wear out. The action is sensitive and accurate. Adjustment for temperature is obtained by changing the position of weights on the cover.

The gas pressure is **outside** the bellows and the stem is attached to the bellows head at the bottom, similar to the construction of the Steam Regulator. This gives great accuracy and long life. The head is formed as an integral part of the bellows, thereby eliminating possibilities of leak at a soldered joint.

Data, Dimensions and Price

Length of Bulb $2\frac{7}{8}$ inches. Connection 2" standard pipe thread. Trimmings consist of one 37-inch lever, two four-pound weights, 12 feet of chain, two ceiling pulleys, four "S" Hooks. Shipping weight 15 lbs.

Stock No. 800. List Price \$22.00

Arco Junior Water Regulator

For Damper Control on Tank Heaters

Stock No. 801



This Regulator is designed by us especially for Tank Heaters. As the dampers are small and light, less power is required to operate them. The construction and operation are similar to that of the No. 800 Arco Water Regulator described on page 122, but smaller in size.

Damper control on a Tank Heater is of vital importance, although it is frequently overlooked. Regulation saves fuel by preventing overheating, saves attention to drafts and maintains constant water temperature. The Arco Junior Water Regulator prevents boiling, sputtering, steaming water at the faucets and insures plenty of hot water as long as there is sufficient fire in the heater. It also prevents the annoyance and waste caused by the fire burning out and requiring rekindling, which frequently occurs in Tank Heaters due to the necessarily small fire pot. In localities where lime is present in the water, the Arco Junior Regulator prolongs the life of the heater by reducing to a minimum the lime deposit in the heater, since it prevents unnecessarily high water temperature at which most of the precipitation takes place.

Data, Dimensions and Price

Length of bulb, 2 inches. Connection, 1½-inch standard pipe thread. Temperature Range 130° to 180° Fahr. Trimmings furnished, one 30-inch lever, one 3-lb. weight, 6 feet of chain, two S Hooks. Shipping weight, 11 lbs.

Stock No. 801. List Price, \$20.00

Relief Valve for Hot Water Heating Boilers



You can insure a hot water heating job with this relief valve.

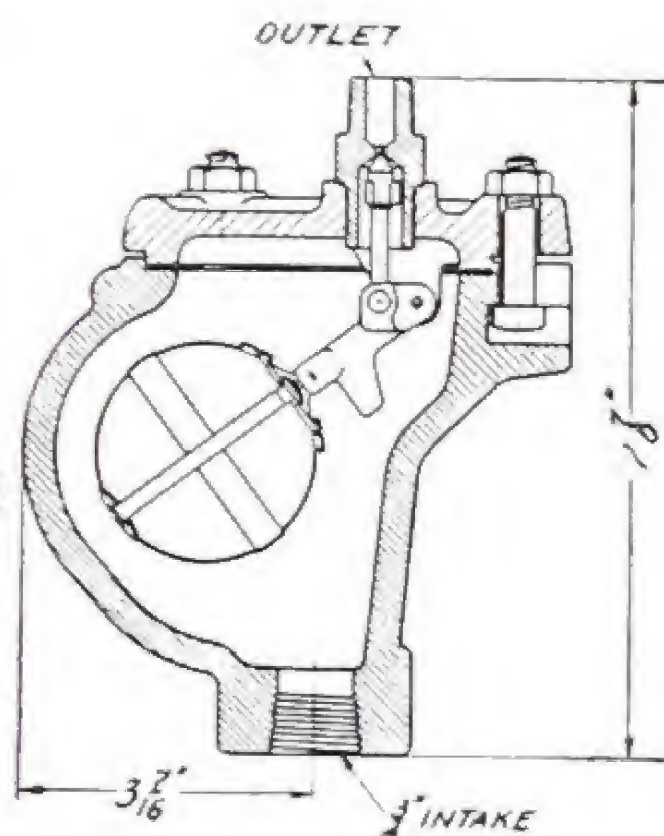
You can forestall cracked boiler sections and "blow ups."

It can also be used for pressure Hot Water jobs where tank is placed in the basement.

It will positively discharge at 30 lbs. pressure.
List Price.....\$36.00

Also made to relieve at pressures of 70, 100 and 130 lbs

The Anderson Air Trap



The best trap on the market for removing accumulated air from water under pressure. Is especially adapted for air pockets at high points in mains, water mains and pipes in large buildings.

Hot water heating systems under pressure.

Forced circulating Hot Water Systems.

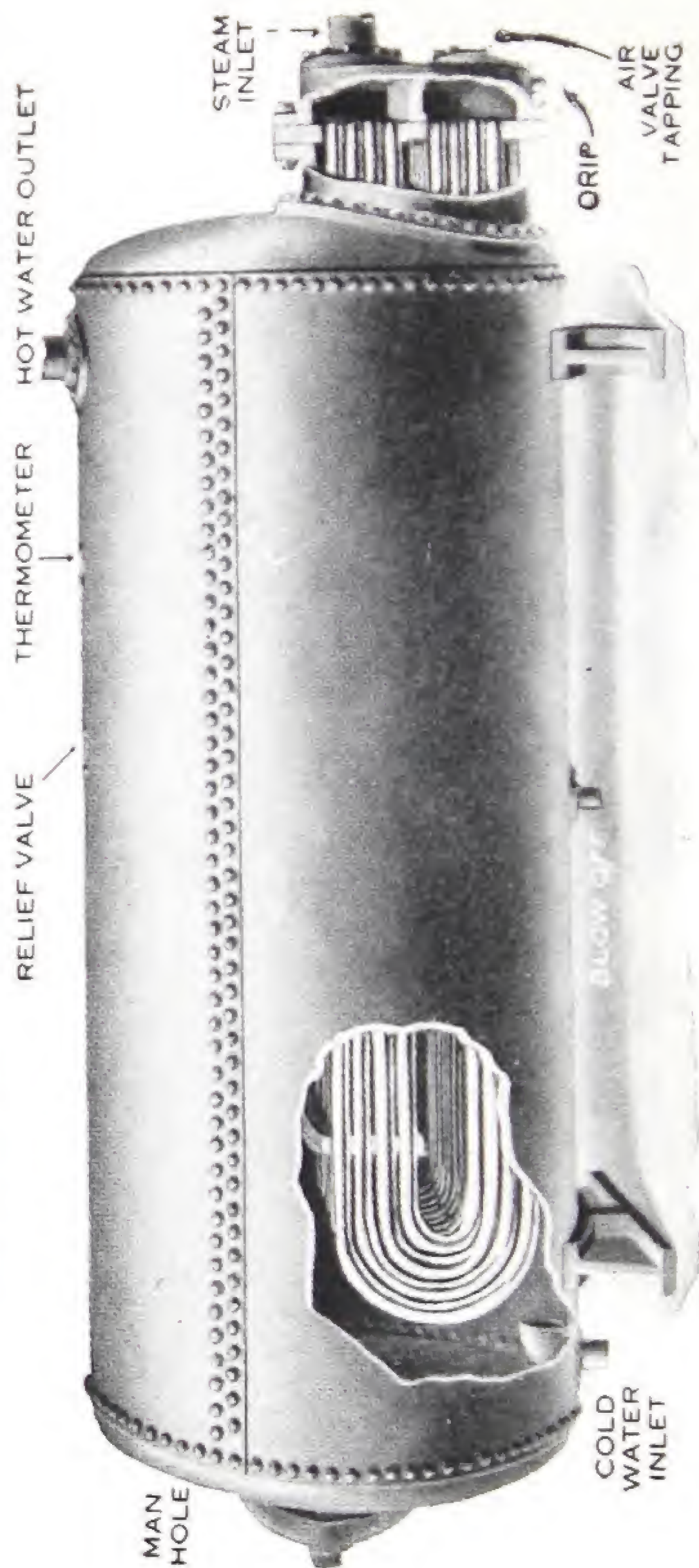
Can be fitted with valve to work at any required pressure up to 200 lbs.

$\frac{3}{4}$ " inlet will swing in a 7" circle.

List Price.....\$40.00

Sirdar

Combined Hot Water Service Heater and Storage Tank



This type of heater can furnish any desired combination of heating and storage capacity.

The heating coil is located in the bottom of the tank where the cold water enters, leaving the upper part for the storage of hot water.

Steam Economy—This type of heater is ideal for installations where there is a limited or intermittent supply of steam for heating water and where the draw is not constant. There is no necessity for sufficient steam to heat the water as fast as required during the times of heaviest draw, as the stored water keeps absorbing the heat while being held in reserve for the maximum duty, which may be for only occasional short periods. For this reason only a small, continuous supply of exhaust steam is needed to heat a large amount of water. When boilers must be installed to supply steam for heating water, less capacity is required with this heater.

| Storage Section | | | | Heating Section | | | | | | | | | | |
|-----------------|------------|----------------------|-----------|-----------------|---|--------|---------|---------|---------|---------|---------|---------|----------|----------|
| No. | Dimensions | Storage U.S.Gals. | Weight | No. | Hourly Heating Capacity 40° F. to 180° F. Using Steam at Atmosphere | 5 lbs. | 10 lbs. | 20 lbs. | 20 lbs. | 40 lbs. | 60 lbs. | 80 lbs. | 100 lbs. | Weight |
| 1 | 30" x 72" | 215 gals. | 1100 lbs. | 1 | 200 gals. | 228 | 256 | 296 | 328 | 354 | 396 | 430 | 458 | 225 lbs. |
| 2 | 30" x 96" | 285 " | 1300 " | 2 | 300 " | 342 | 384 | 444 | 492 | 531 | 594 | 645 | 687 | 250 " |
| 3 | 30" x 120" | 375 " | 1500 " | 3 | 400 " | 456 | 512 | 592 | 656 | 708 | 792 | 860 | 916 | 300 " |
| 4 | 36" x 96" | 425 " | 1550 " | 4 | 500 " | 570 | 640 | 740 | 820 | 885 | 990 | 1075 | 1145 | 350 " |
| 5 | 36" x 120" | 530 " | 1850 " | 5 | 600 " | 684 | 768 | 888 | 984 | 1062 | 1188 | 1290 | 1374 | 370 " |
| 6 | 36" x 144" | 640 " | 2100 " | 6 | 750 " | 855 | 960 | 1110 | 1230 | 1327 | 1485 | 1612 | 1717 | 400 " |
| 7 | 42" x 120" | 720 " | 2200 " | 7 | 1000 " | 1140 | 1280 | 1480 | 1640 | 1770 | 1980 | 2150 | 2290 | 450 " |
| 8 | 42" x 144" | 860 " | 2450 " | 8 | 1250 " | 1425 | 1600 | 1850 | 2050 | 2212 | 2475 | 2687 | 2862 | 500 " |
| 9 | 42" x 168" | 1000 " | 2800 " | 9 | 1500 " | 1710 | 1920 | 2220 | 2460 | 2655 | 2970 | 3225 | 3435 | 550 " |
| 10 | 48" x 120" | 940 " | 2925 " | 10 | 1750 " | 1995 | 2240 | 2590 | 2870 | 3097 | 3465 | 3762 | 3907 | 600 " |
| 11 | 48" x 144" | 1125 " | 3350 " | 11 | 2000 " | 2280 | 2560 | 2960 | 3280 | 3540 | 3960 | 4300 | 4580 | 700 " |
| 12 | 48" x 168" | 1300 " | 3840 " | 12 | 2500 " | 2850 | 3200 | 3700 | 4100 | 4424 | 4950 | 5374 | 5724 | 800 " |
| 13 | 48" x 192" | 1500 " | 4200 " | 13 | 3000 " | 3420 | 3840 | 4440 | 4920 | 5310 | 5940 | 6450 | 6870 | 900 " |
| 14 | 60" x 120" | 1460 " | 4300 " | 14 | 4000 " | 4560 | 5120 | 5920 | 6560 | 7080 | 7920 | 8600 | 9160 | 1200 " |
| 15 | 60" x 144" | 1700 " | 4950 " | 15 | 5000 " | 5700 | 6400 | 7400 | 8200 | 8850 | 9900 | 10750 | 11450 | 1500 " |
| 16 | 60" x 168" | 2000 " | 5600 " | 16 | 7500 " | 8550 | 9600 | 11100 | 12300 | 13270 | 14850 | 16120 | 17170 | 2000 " |
| 17 | 72" x 174" | 3000 " | 7000 " | 17 | 10000 " | 11400 | 12800 | 14800 | 16400 | 17700 | 19800 | 21500 | 22900 | 3200 " |
| 18 | 84" x 168" | 4000 " | 8700 " | 18 | 12500 " | 14250 | 16000 | 18500 | 20500 | 22120 | 24750 | 26870 | 28620 | 3800 " |
| 19 | 96" x 168" | 5200 " | 10000 " | 19 | 15000 " | 17100 | 19200 | 22200 | 24600 | 26550 | 29700 | 32250 | 34350 | 4500 " |
| 20 | 96" x 192" | 6000 " | 11000 " | 20 | 20000 " | 22800 | 25600 | 29600 | 32800 | 35400 | 39600 | 43000 | 45800 | 5100 " |

Note—To specify heaters, combine the numbers of the required storage and heating sections. For illustration, "One Heater with No. 9 storage and No. 13 heating sections" has 1000 gallons storage with 3000 gallons heating capacity.
Saddles for supporting these Heaters will be furnished when required without extra charge, but no valves or other attachments are included.

Kewanee Water Heating Garbage Burners—Type A

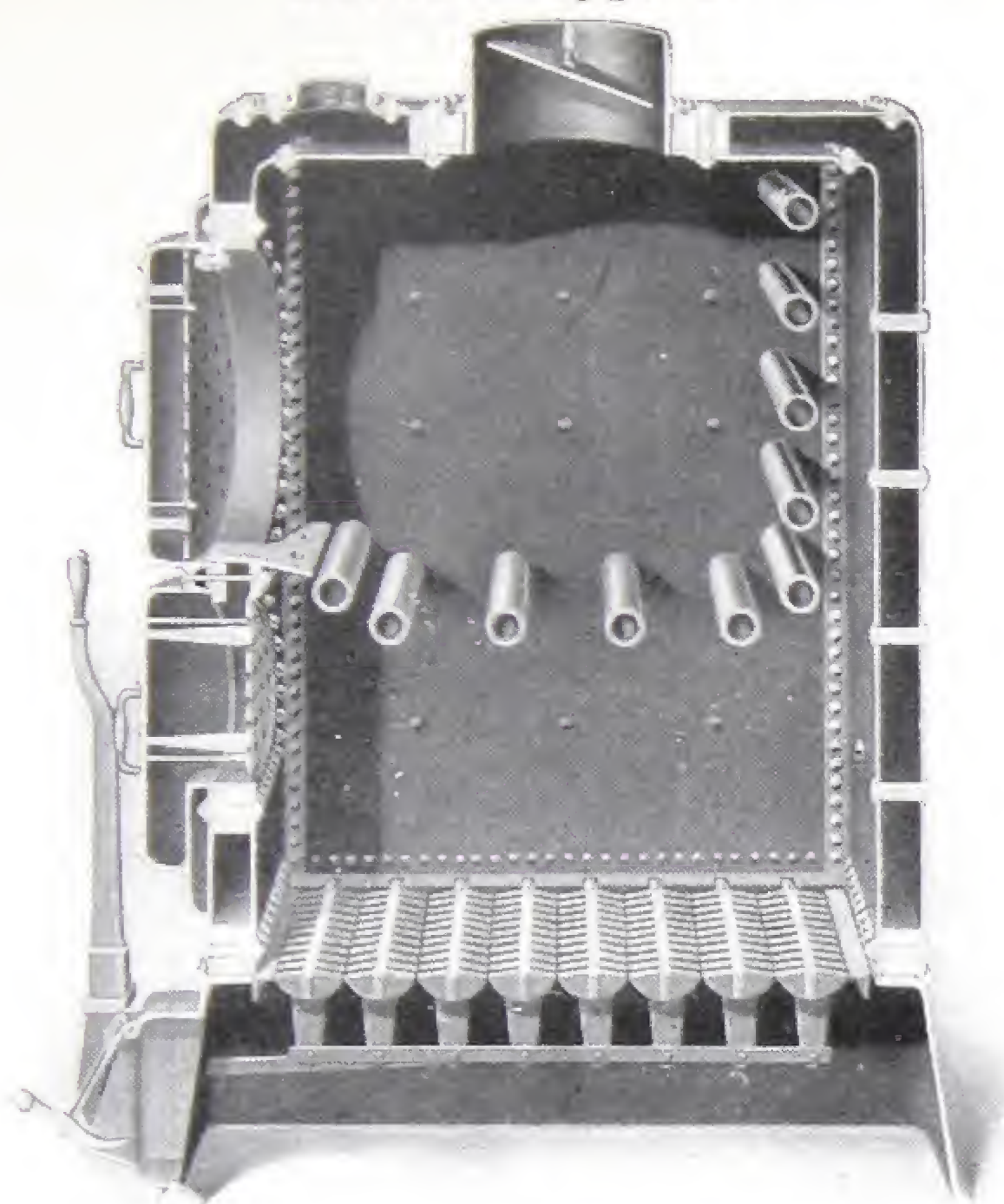


Sectional View Type A Kewanee Water Heating Garbage Burner

| | | | | |
|---|----------|----------|----------|----------|
| Catalog Number..... | 30 | 31 | 32 | 33 |
| Cipher..... | Gay | Gaze | Gear | Gent |
| Capacity, gallons per hour, 50 de- grees raise..... | 200 | 300 | 400 | 600 |
| Capacity, Garbage Chamber, one charge, bushels..... | 1 | 2 | 3 | 4 |
| Height over all.....inches | 58 | 64 | 64 | 68 |
| Diameter of floor space re- quired.....inches | 22 | 25 | 30 | 36 |
| Height to bottom of front Garbage Door.....inches | 33 | 37 | 37 | 39 |
| Dimensions of Garbage Door.....inches | 7 x 8 | 7 x 8 | 7 x 8 | 9 x 12 |
| Dimensions of Coal or Fire Doors.....inches | 7 x 8 | 7 x 8 | 7 x 8 | 9 x 12 |
| Diameter of Coal or Lower Grates.....inches | 12 | 16 | 20 | 24 |
| Size, Flow and Return Flan- ges, two each.....inches | 1½ | 2 | 2 | 2 |
| Diameter of Smoke Pipe.....inches | 6 | 8 | 8 | 9 |
| Approximate shipping weight.....pounds | 600 | 800 | 1000 | 1500 |
| List Price, complete with Tools.... | \$235.00 | \$285.00 | \$325.00 | \$435.00 |

Above ratings all based on raising temperature of water 50 degrees in one hour.

Kewanee Water Heating Garbage Burner—Type D



Sectional View Type D Kewanee Water Heating Garbage Burner
Ratings below all based on raising temperature of water 50 degrees
in one hour.

| Catalog Number..... Cipher..... | 36 Gamy | 37 Gang | 38 Gap | 39 Garb | 40 Gash |
|--|------------|------------|-----------|------------|------------|
| Capacity, gallons per hour, 50 degrees raise..... | 800 | 1000 | 1200 | 1500 | 1800 |
| Capacity, Garbage Cham- ber, one charge, bushels | 4 | 5 | 7 | 9 | 12 |
| Height over all..... | 56" | 56" | 56" | 56" | 56" |
| Dimensions of floor space required..... | 35 x 35 | 35 x 41 | 35 x 47 | 41 x 53 | 41 x 59 |
| Dimensions over all..... | 32 x 32 | 32 x 38 | 32 x 44 | 38 x 50 | 38 x 56 |
| Height to bottom of Gar- bage Door..... | 31 | 31 | 31 | 31 | 31 |
| Dimensions of Garbage Door..... | 16 x 16 | 16 x 16 | 16 x 16 | 16 x 16 | 16 x 16 |
| Dimensions of Coal or Fire Door..... | 16 x 10 | 16 x 10 | 16 x 10 | 16 x 10 | 16 x 10 |
| Dimensions of Lower or Coal Grates..... | 24 x 24 | 24 x 30 | 24 x 36 | 30 x 42 | 30 x 48 |
| Size, Flow and Return Flanges, 1 ea..... | 2½ 10 | 2½ 10 | 2½ 10 | 3 12 | 3 12 |
| Diameter of Smoke Pipe . | | | | | |
| Approximate shipping weight, lbs..... | 2100 | 2300 | 2500 | 3000 | 3300 |
| List Price, complete with tools..... | \$690.00 | \$755.00 | \$815.00 | \$965.00 | \$1075.00 |

Kewanee Water Heating Garbage Burners

For the larger buildings where garbage accumulates, such as apartments, hospitals, sanitariums, hotels, restaurants, club houses, etc., the most practical water heating equipment is the Kewanee Garbage Burner.

It is strongly constructed of steel, with cast-iron doors.

The operation is very simple. A small fire is started on the lower or coal grates, the garbage being thrown into the upper chamber in quantities to completely fill it if necessary. It requires a short time to dry the garbage, reducing it to a combustible condition, when it burns completely without odor, leaving only a small amount of fine odorless ash.

While this burning of the garbage is going on a distinct saving of fuel in heating water for domestic purposes is effected. In the work of heating water accomplished by the garbage burner, a saving of from 30 to 50 per cent. in fuel is made over a regular tank heater of the same capacity, consequently making what was an expense an asset, by making fuel of garbage. It also eliminates all cost of removing garbage.

The By-Pass (a patented feature of all Kewanee Water Heating Garbage Burners) prevents the wet and damp garbage from smothering the fire when it is first started, as it provides a passage for the flames around the garbage, drying it to a point where it ignites and burns without odor.

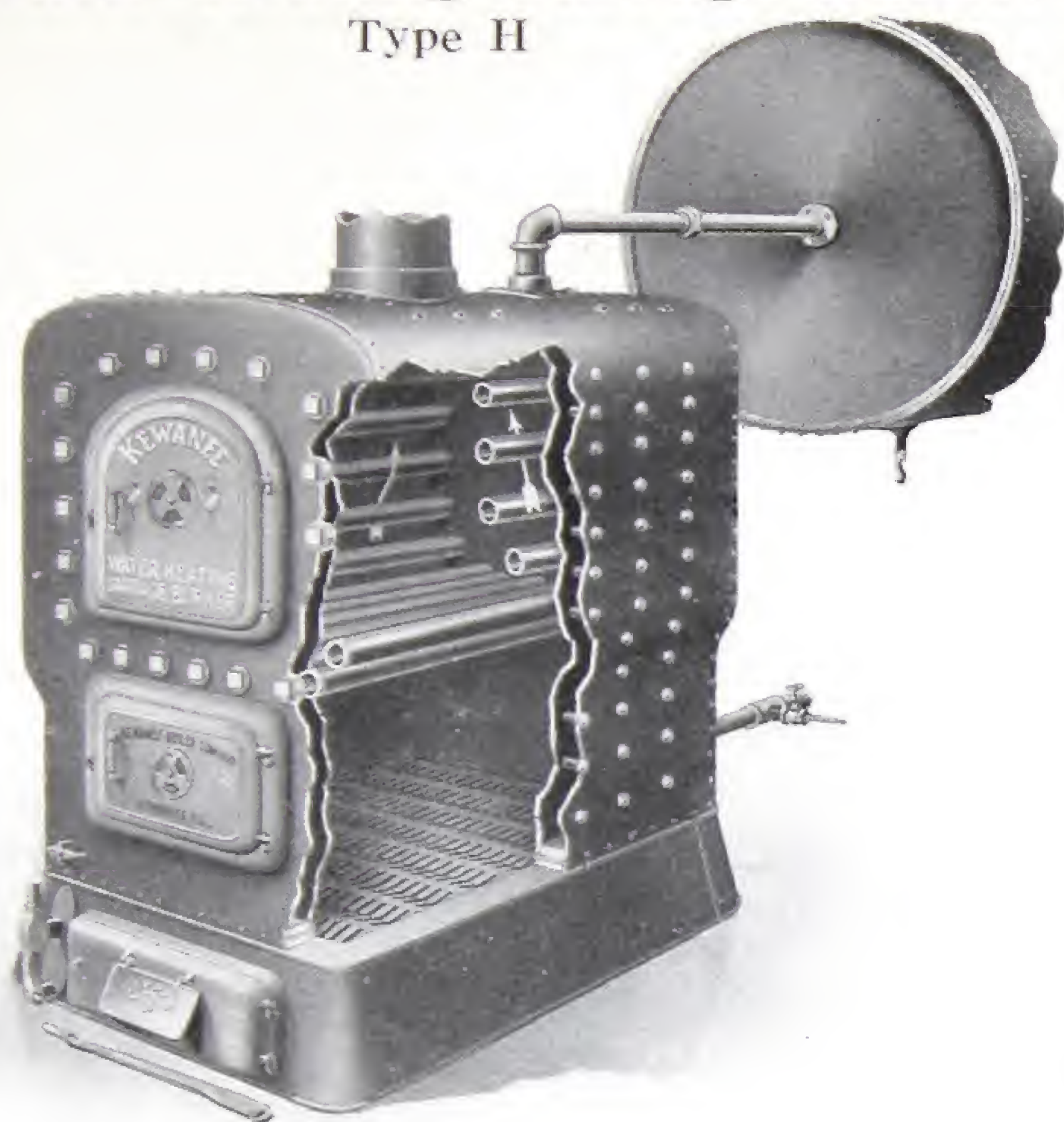
Kewanee Water Heating Garbage Burners are built to withstand a working pressure of 125 pounds per square inch, thus enabling them to carry the water pressure of any city.

Kewanee Water Heating Garbage Burners will produce best results at minimum cost when the storage tank attached to them has a capacity of 50 per cent. greater than the hourly capacity of the burner printed in the tables of specifications.

Kewanee

Water Heating Garbage Burner

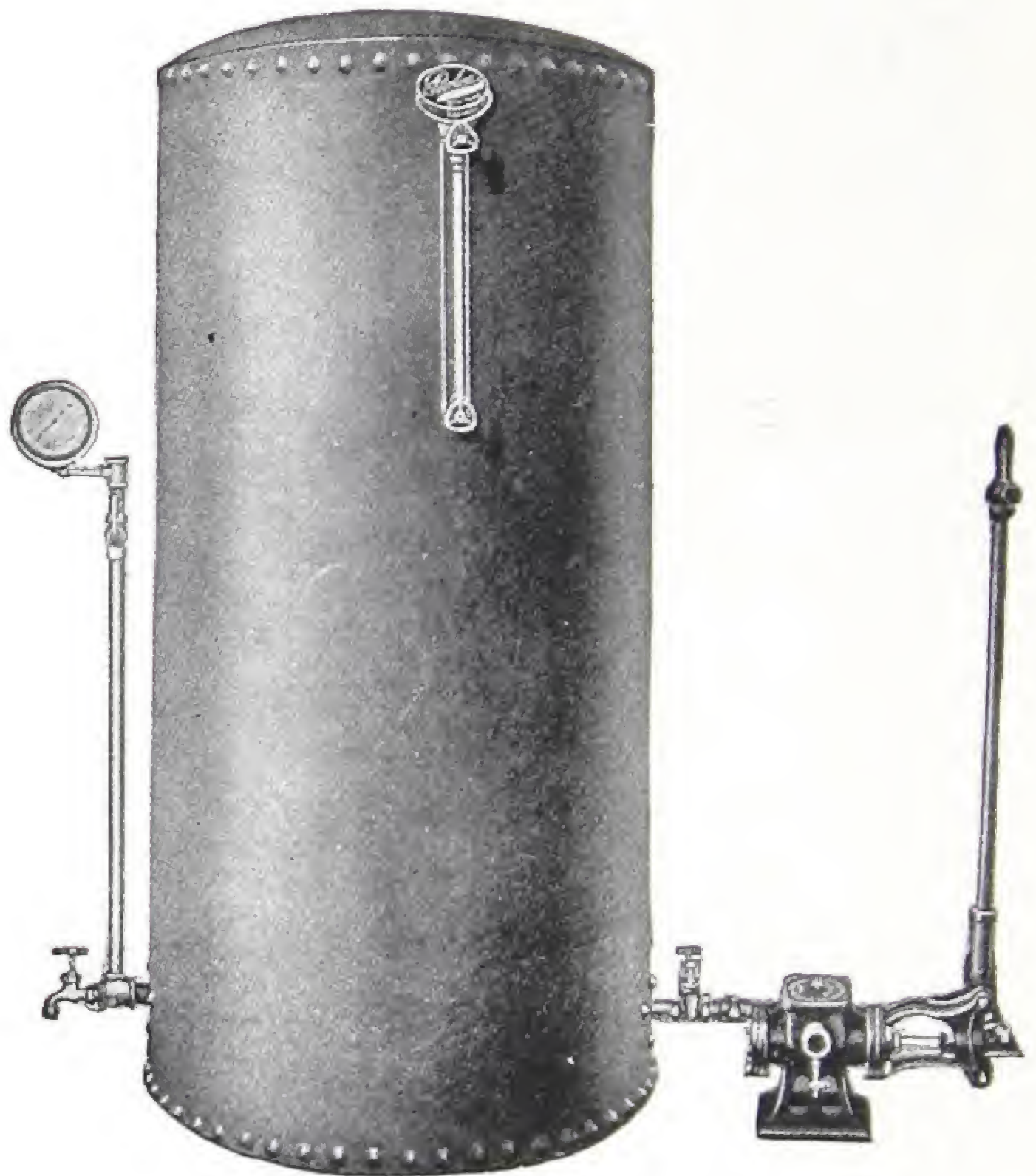
Type H



Sectional View Type H Kewanee Water Heating Garbage Burner

| Catalog Number..... Cipher..... | 41 Gait | 42 Game | 43 Gasp | 44 Germ | 45 Gift |
|---|------------|------------|------------|------------|------------|
| Capacity, gallons per hour, 50 degrees raise. | 1200 | 1500 | 1800 | 2200 | 2600 |
| Capacity, Garbage Cham- ber, one charge, bushels | 6 | 8 | 9 | 11 | 12 |
| Height over all, inches. . . | 69 | 69 | 69 | 71 | 71 |
| Dimensions of floor space required, inches. | 38 x 36 | 38 x 42 | 38 x 48 | 38 x 54 | 38 x 60 |
| Dimensions over all inches | 32 x 38 | 38 x 38 | 38 x 44 | 38 x 50 | 38 x 56 |
| Height to bottom of Gar- bage Door, inches..... | 37 | 37 | 37 | 37 | 37 |
| Dimensions of Garbage Door, inches..... | 16 x 16 | 16 x 16 | 16 x 16 | 16 x 16 | 16 x 16 |
| Dimensions of Coal or Fire Door, inches. | 16 x 8 | 16 x 8 | 16 x 8 | 16 x 8 | 16 x 8 |
| Dimensions of Lower or Coal Grates, inches.... | 24 x 24 | 24 x 30 | 24 x 36 | 24 x 42 | 24 x 48 |
| Size, Flow and Return Flanges, 1 each, inches. | 3 | 3 | 4 | 4 | 4 |
| Diameter of Smoke Pipe, inches..... | 10 | 10 | 10 | 12 | 12 |
| Approximate shipping weight, pounds..... | 2800 | 3100 | 3400 | 3700 | 4000 |
| List Price, complete with Tools..... | 1045.00 | 1095.00 | 1145.00 | 1210.00 | 1295.00 |

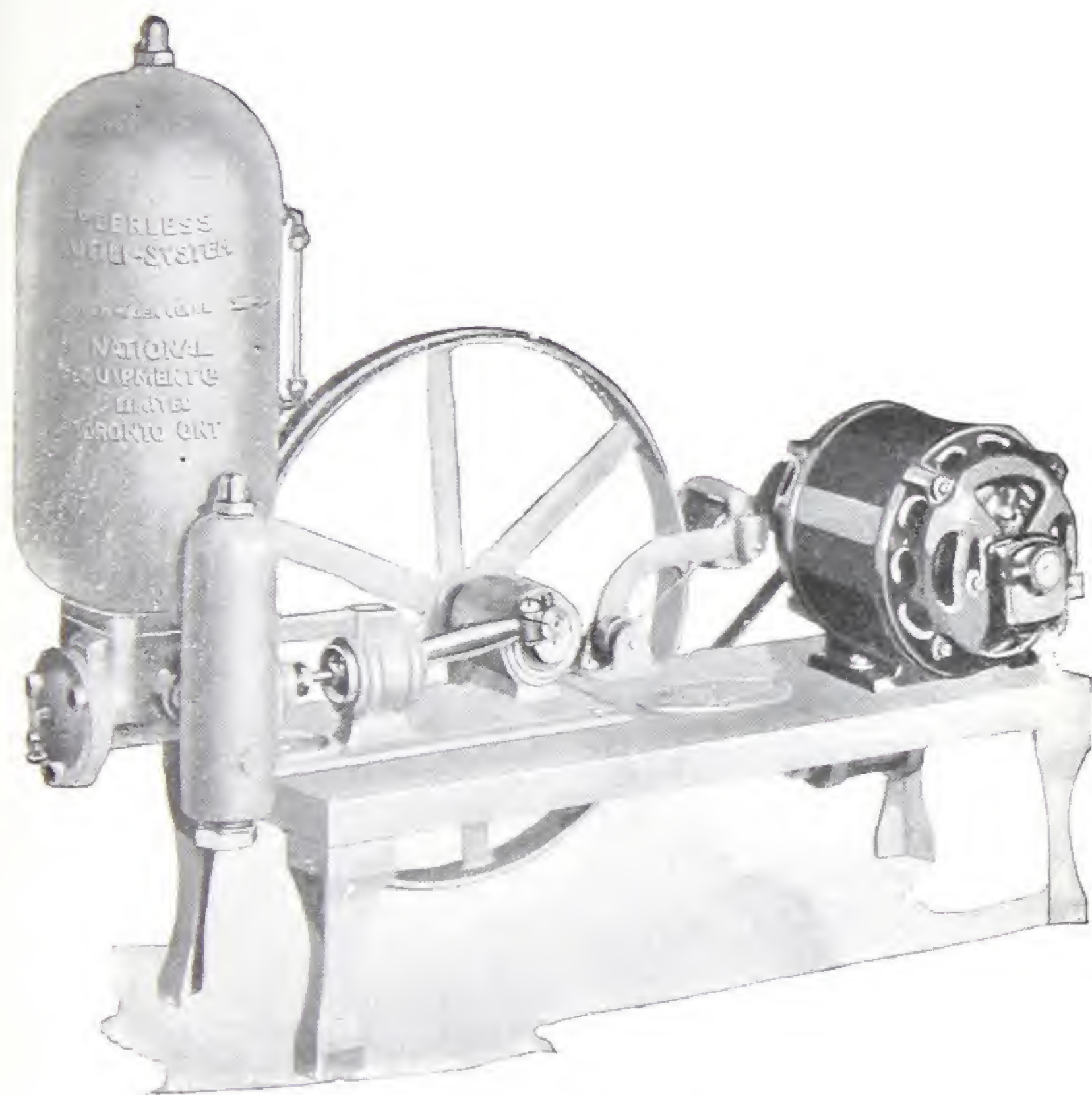
Pneumatic Water Systems



No. 112 Series System

Prices on application.

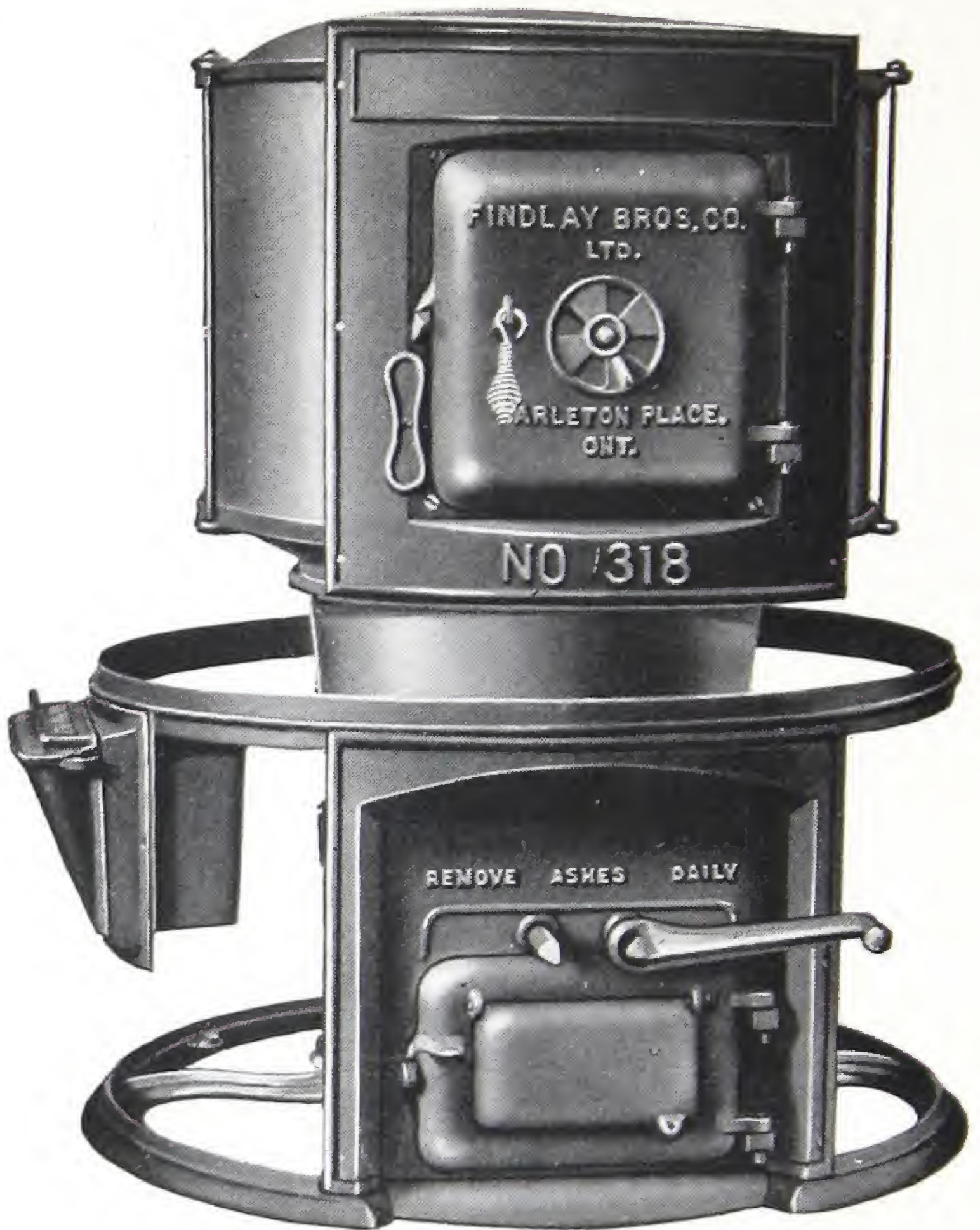
Pneumatic Water Systems



Peerless "Utili" System

Prices on application.

Warm Air Furnaces



Showing Furnace without Casing. Sterling, Kir-Ben
& Royal Pipe Furnaces, all sizes.

Prices on Application.

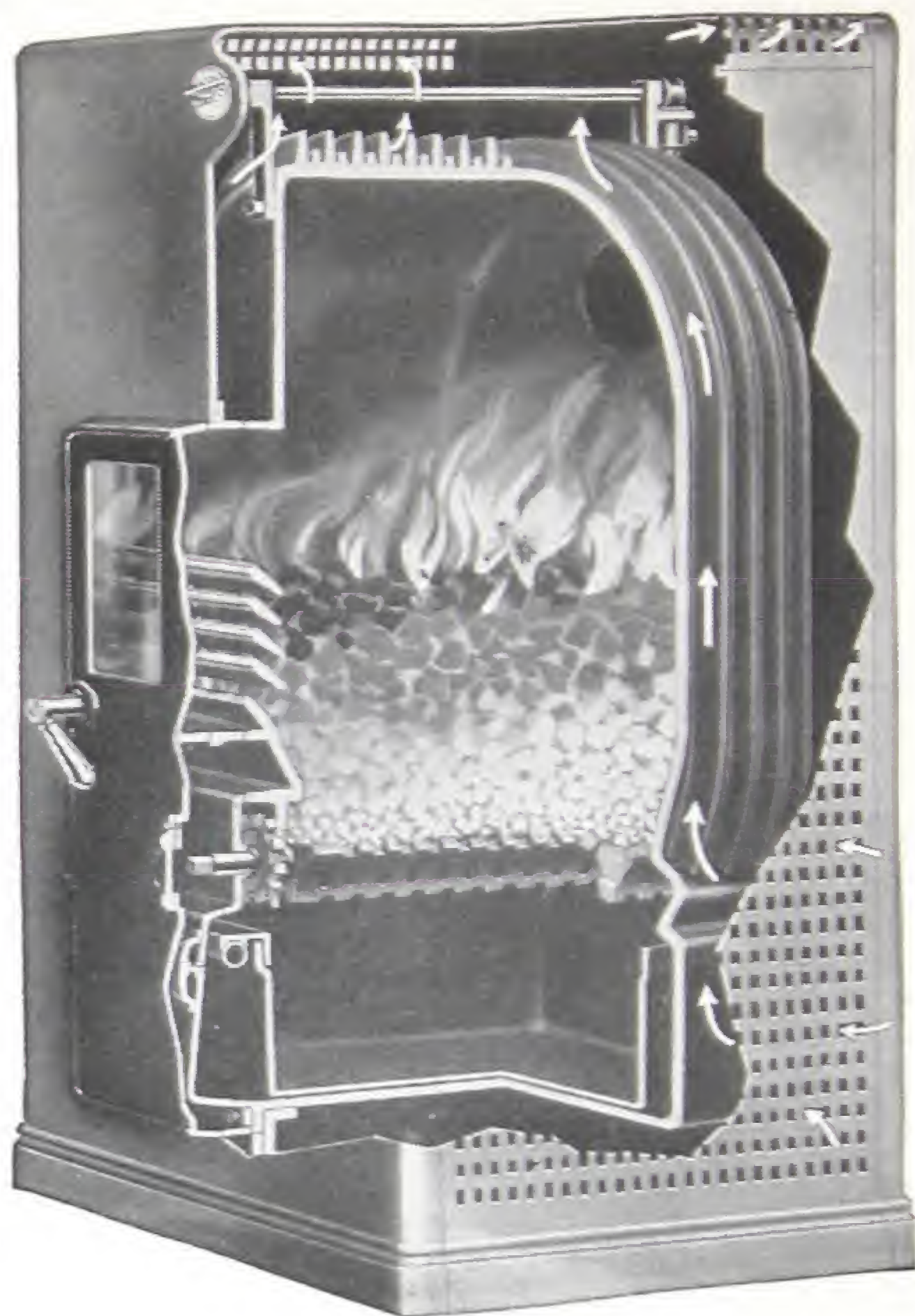
Warm Air Furnaces



Showing Pipeless construction. Sterling, Kir-Ben
& Royal Pipeless Furnaces, all sizes.

Prices on Application.

Ideal Vecto Warm Air Heater



Special Features of Construction

Solid seamless body construction prevents gas, dust or soot escaping into the rooms.

Cleanliness and economy are insured.

Special heating surface warms large volumes of air.

Lock-Safe Door — a double guarantee of cleanliness, safety and economy.

Pyrex Glow Panels withstand high fire temperatures and remain transparent.

Ideal Vecto Warm Air Heater



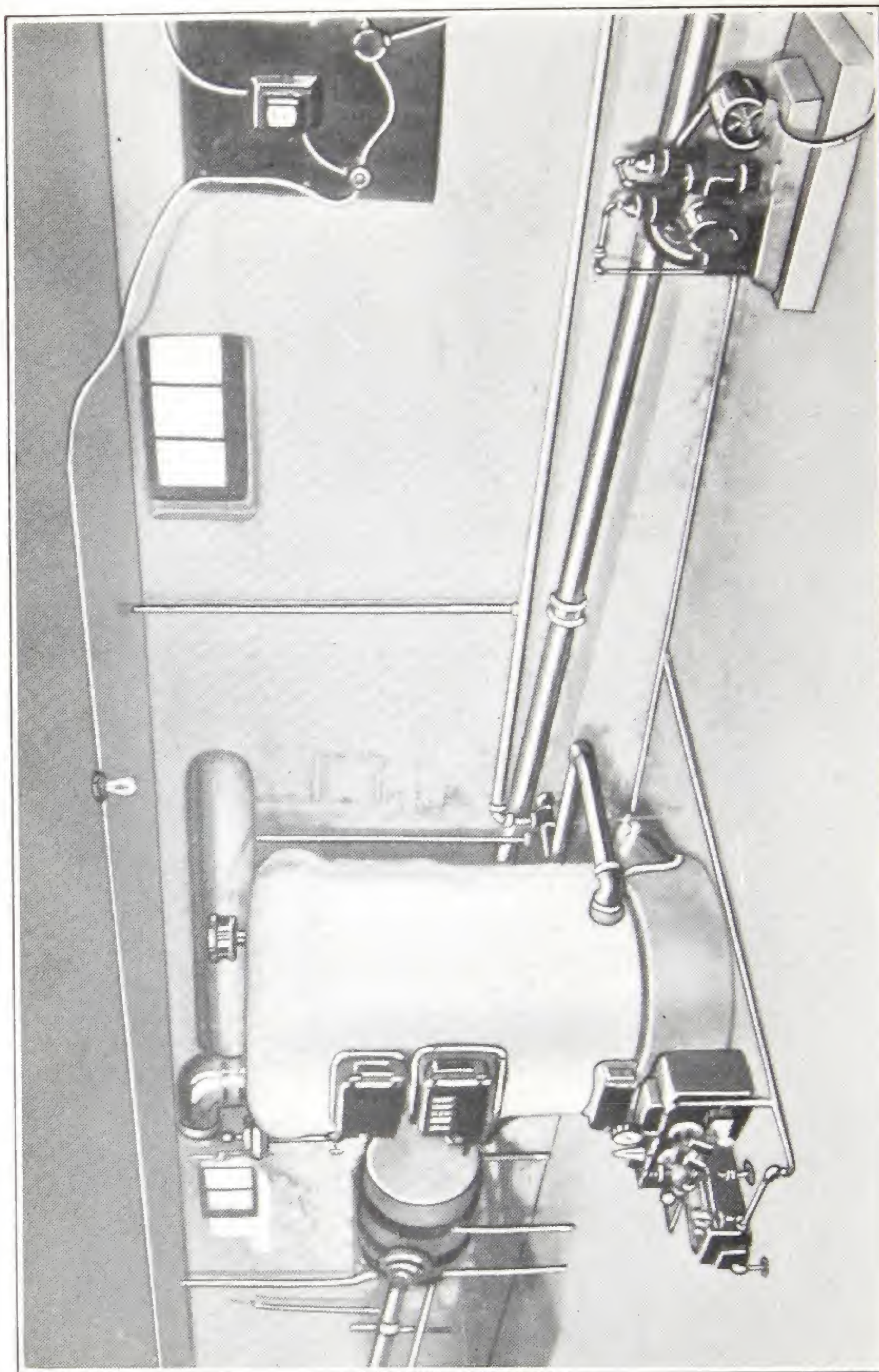
Exterior finish is a beautiful vitreous enamel — lustrous as a new automobile, but permanently so.

Made in one size only, for use in buildings containing not over 6000 cubic feet contents.

Height 49'', width 22'', length 34''.

Price net F.O.B. Montreal, \$110.00

Caloroil Fuel Oil Burners



Why Caloroil Burners Give Lasting Satisfaction

Caloroil Burners combine all the desirable features that years of experience with oil burning equipment has shown will give:

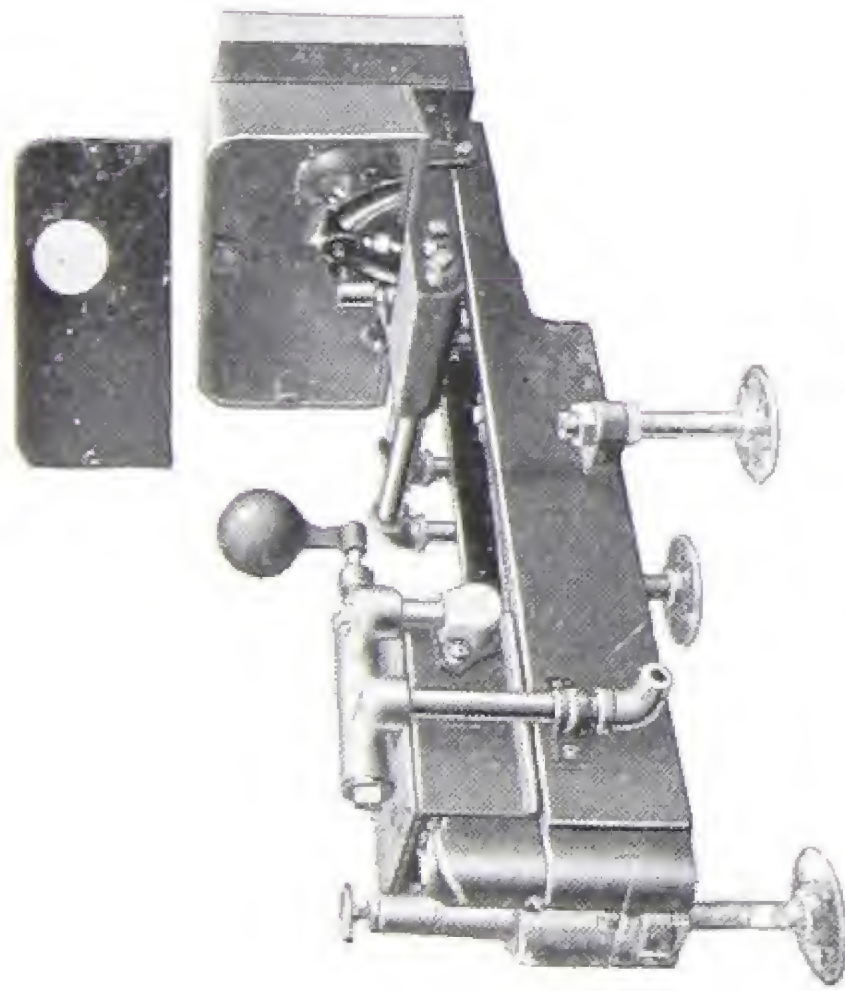
Uninterrupted service
Uniform heat
Lasting economy

Comfort
Reliability
Quiet operation

Flexibility
Safety
Cleanliness

Caloroil Burners are different from other burners in that they combine all of the following features:

- (1) Thermostatically controlled; absolutely automatic in operation.
- (2) Operate without smoke or odor, and are clean.
- (3) Size of flame can be regulated, by adjustment of screw, to meet heating requirements of the boiler.
- (4) Construction and operation easily understood; no parts in the boiler.
- (5) Neither a gravity nor a pressure feed; the oil is lifted to the atomizer by an automatically created vacuum.
- (6) Require minimum servicing.
- (7) Attain maximum efficiency by complete atomization of the oil.
- (8) Operate perfectly on any grade of fuel oil that will flow without preheating. Use cheaper grades which contain the most heat value.
- (9) Can be installed in a short time; no dismantling of present boiler necessary.
- (10) Installation wholly outside of boiler or furnace—always accessible.
- (11) Can light wood fire in combustion chamber without damage to burners.



STANDARD SIZES OF MODEL "O" BURNER

| Style | Size | *Boiler radiation, sq. ft. | |
|-------|-------|----------------------------|--------|
| | | Steam | Water |
| AA-24 | 1-S | 1200 | 2000 |
| AA-24 | 2-T | 2400 | 4000 |
| AA-24 | 3-TS | 3600 | 6000 |
| AA-24 | 4-TT | 4800 | 8000 |
| AA-24 | 5-TTS | 6000 | 10,000 |

The Trane Vapor Heating System

This system operates by steam at a few ounces pressure.

It is automatic, quick heating, noiseless, requires little attention, and is economical on fuel.

It works under atmospheric pressure, and is open to the air through the air relief valve on top of the receiving tank or at end of air returns near boiler.

Hot Water type radiators are used, and the supply connection is made at the top, through a Graduate Valve, and air in the radiator is expelled through a return fitting or Bellows Radiator Trap at the bottom, at the opposite end of the radiator.

The entire operation is simplicity itself. When fire is started in the boiler the small amount of water in it soon becomes heated, and the Vapor rises from its surface, just as it does from a pan of water being heated on a stove.

This Vapor rises through the pipes, enters the radiators, and displaces the air which previously filled the system.

The radiators become hot, and the pressure in the boiler still is practically at atmosphere.

The Trane Vapor Heating System

Vapor by this time has reached the Air Relief Valve. The air has been entirely expelled, and the heat closes this valve, preventing any loss or escape of vapor.

When from two to eight ounces of pressure is reached, according to where regulator weight is set, the Vapor Regulator works, closing the draft damper and opening the check damper.

After some time when pressure falls, the reverse operation takes place. It is thus automatic and maintains the heat by regulating its own dampers.

Water and air together pass through the returns by gravity. The water returns to the boiler and the air escapes through the air relief valve.

If a pressure of a pound or more is secured at the boiler, before air relief valve closes, water will rise in the Receiver or Trap, lift the float and close the air outlet. This immediately seals the system, equalizes the pressure, and allows the water to return again to the boiler.

For many buildings, vapor heating has vital advantages over any other system, some of which are—

Reduction in coal bills amounting, in some cases, to as much as 40%.

Ease of control.

Automatically regulates the amount of heat required and coal consumed.

No air valves.

Each radiator may be separately controlled.

Mild heat in moderate weather and plenty of heat in cold weather.

No noise.

Radiators may be heated all over or only a portion heated or shut off entirely without interfering with any other part of the system.

If interested send for special descriptive catalog.

The Trane Vapor Heating System

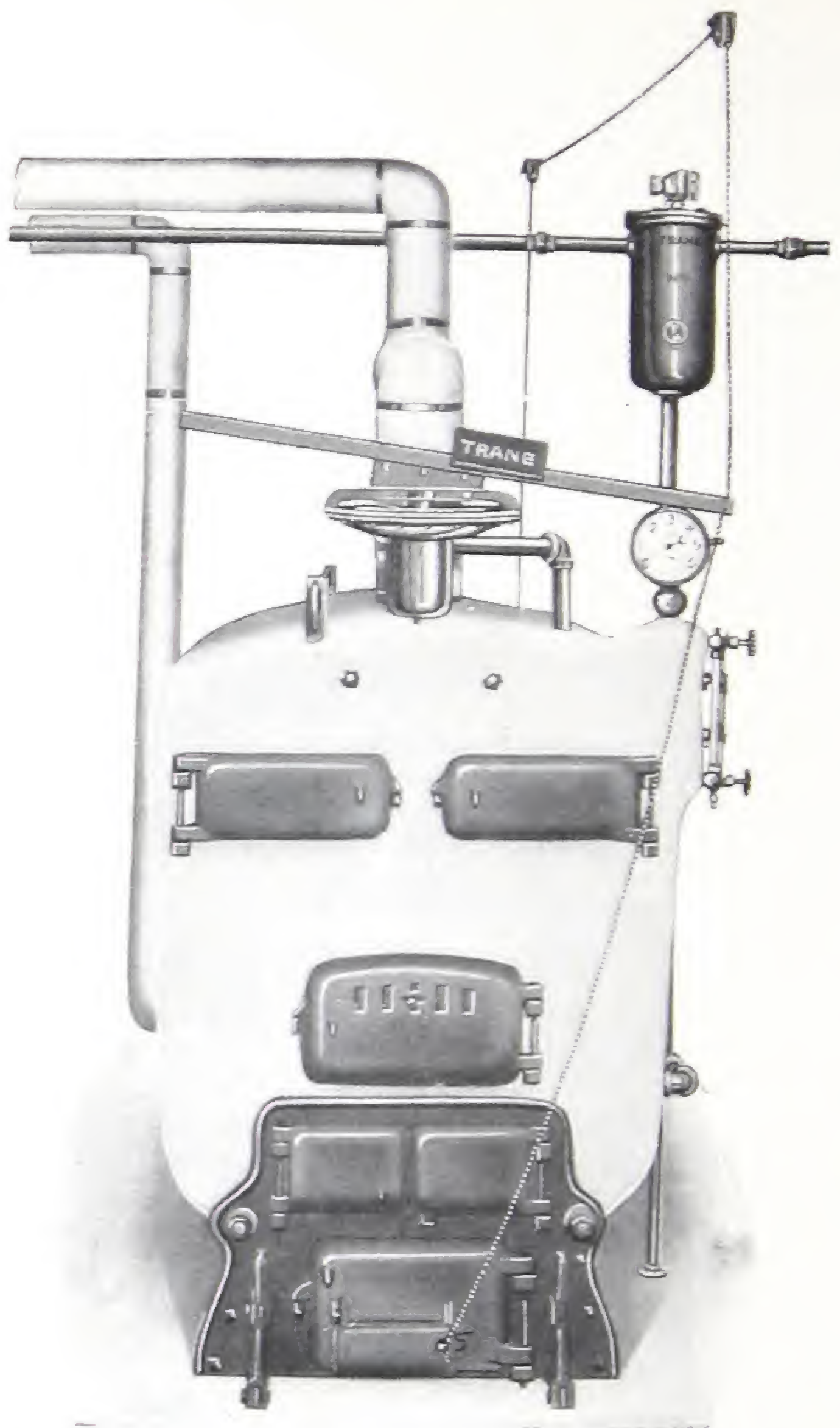


Illustration of Trane Vapor Heating Specialties

Showing fixtures required for a small installation of 400 sq. ft. or less.

This system is fully described in our Bulletin No. 9, which will be mailed on request.

The Trane Vapor Heating System

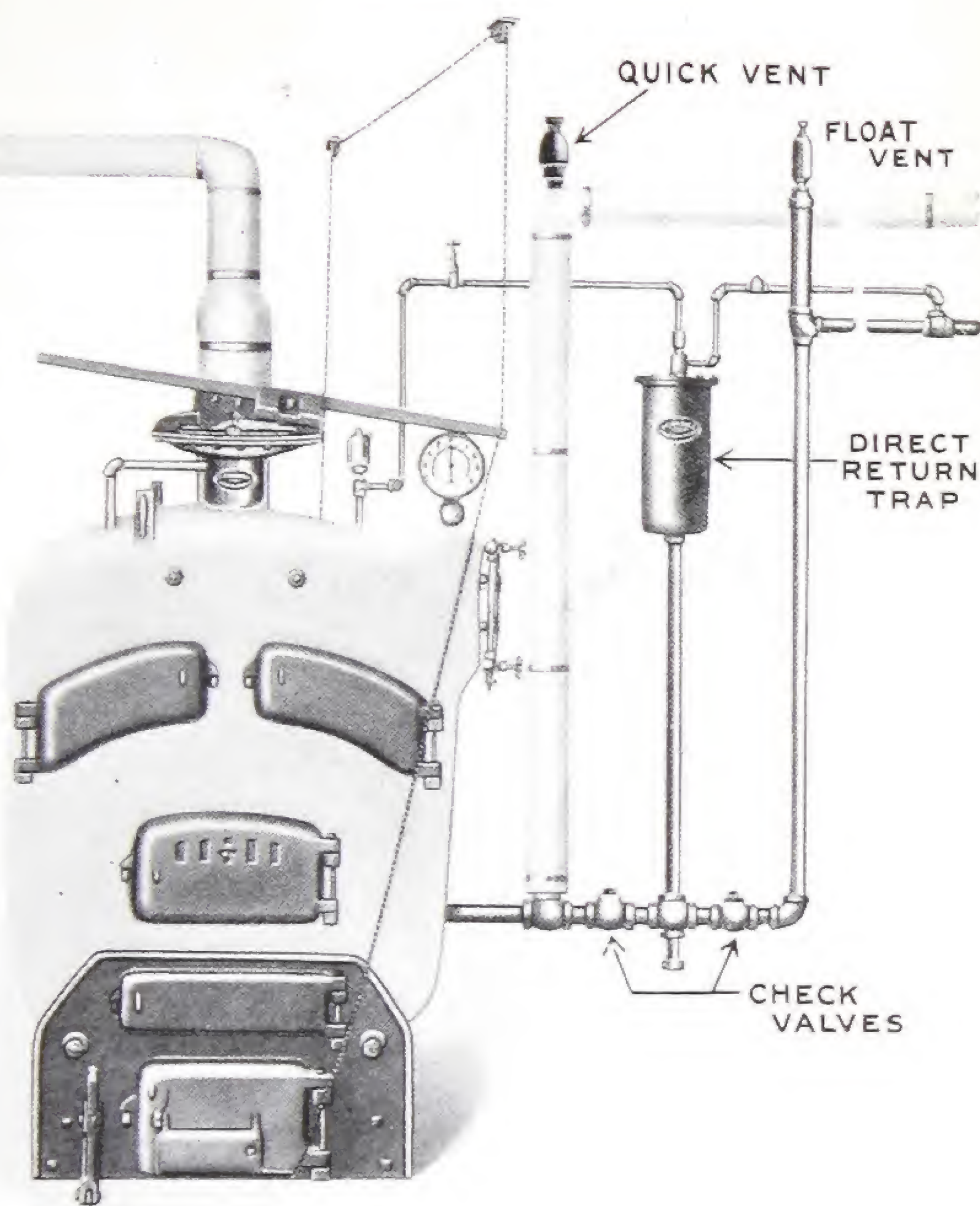


Illustration of Trane Vapor Heating Specialties

Showing fixtures required for a system carrying over 400 sq. feet of radiation.

This is as nearly a foolproof system as can be devised. The condensation being returned to the boiler under all conditions, and the dampers absolutely controlled by the damper regulator.

This system is fully described in our Bulletin No. 10, which will be mailed on request.

Trane Heating Specialties



No. 2 Direct Return Trap

Is used on Heating Systems of over 400 sq. feet.

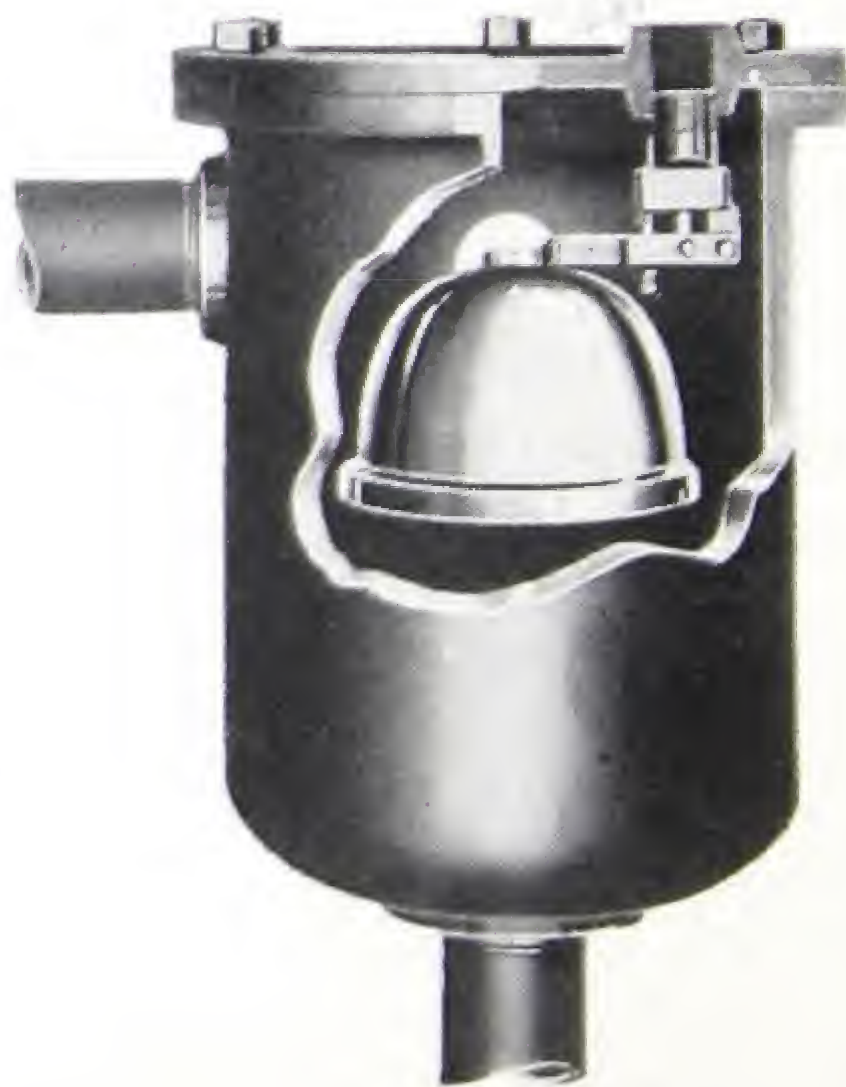
It automatically returns the water to the boiler under all conditions.

It is assurance against accident.

No. 2 Receiver

Is used on systems containing less than 400 sq. feet.

Answers same purpose as direct trap for small plants.



Trane Heating Specialties



Float Vent



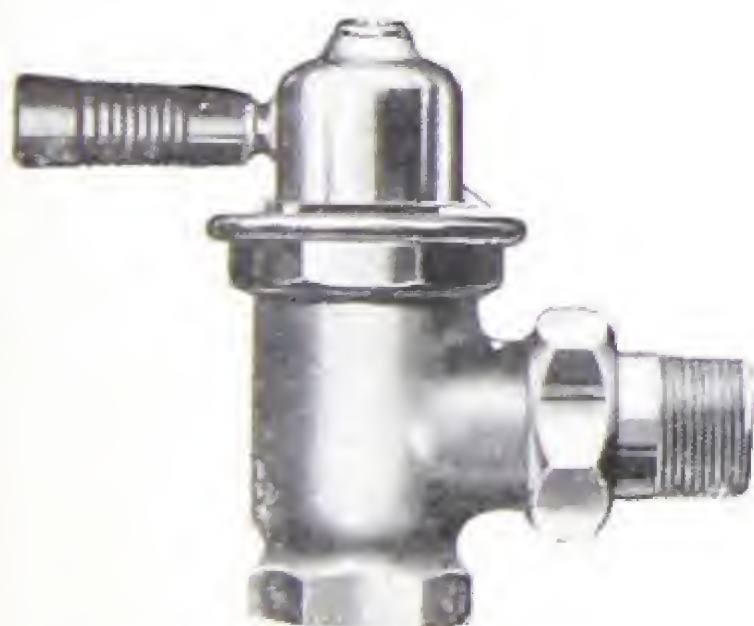
Quick Vent



Bellows Trap



Damper Regulator



Graduate Valve



Return Elbow

Trane Vapor Heating Data

Radiation Required

Some vapor systems require more radiation than others. Generally speaking, those open to the atmosphere and not provided with apparatus allowing an increase of two or three pounds pressure, use more radiation than is required with a straight steam plant. The Trane System, provided with a positive means for sealing the system under pressure, is designed to attain an increased pressure when desired, without injury to the plant or boiler. For this reason, the Trane System can be operated with no more radiation than is required for a straight steam plant.

In view of the fact that very few heating contractors figure radiation alike, our Engineering Department has provided Tables Nos. 1 and 2 for this purpose. These tables are figured by the B. T. U. method with a temperature of 210 degrees at the radiator and using the best accepted coefficients for heat transmission of wall, glass and contents that can be secured. The divisors for wall, glass, and contents tabulated under the given outside temperatures in Table No. 1, will provide the proper radiation for an inside temperature of 70 degrees. This result may easily be converted into the amount of radiation necessary to secure lower or higher inside temperatures by using Table No. 2.

Trane Vapor Heating

Boilers and Chimney Flues

A vapor system requires the same sized boiler in proportion to radiation as a correctly designed steam or hot water system. Because of the many different types of boilers available for heating purposes, it is difficult to offer anything other than general rules in this connection, and manufacturers' recommendations as to capacities and particularly as to chimney sizes should be generally followed. Boilers must be selected not only with regard to their rated capacities, but with regard to the particular fitness of certain types of boilers for the building to be heated. The following points are recommended for consideration

An addition of 25% is generally accepted as correct for the average heat loss in piping and 50% should be added to the total for excess.

When round boilers are used, low boilers without intermediate sections are best for soft coal and ordinary draft conditions. For hard coal with ordinary draft conditions or soft coal with exceptionally good draft conditions, boilers with one intermediate section should be used. Boilers with two or more intermediate sections should only be used for hard coal and with exceptionally good draft conditions.

When square boilers are used soft coal is usually burned and long boilers should be avoided for ordinary draft conditions. It is also well to be a little more liberal with the boiler size.

On down draft boilers, particularly, special attention must be paid to the manufacturers' recommendations as to height and size of chimney.

Trane Vapor Heating

In open exposed principal rooms on first floor with open hall leading to second floor, subject to north or northwest exposure, add at least 20%.

Bathrooms requiring less than ten feet according to rule, add at least 50%; larger bathroom at least 25%.

Add at least 10% for each fireplace.

Add at least 20% for radiation under seats.

Add at least 20% for radiator on inside wall in an exposed room.

In long narrow stores, picture shows, etc., exposed on narrow ends only, with second floor heated, use $\frac{1}{2}$ contents and figure according to rule.

In narrow stores exposed on 3 or 4 sides double contents.

In school rooms not ventilated, double the contents.

For direct-indirect radiation add at least 35%.

For indirect radiation add at least 75%.

Allowances and Additions to Be Made

The tables give you actual calculated results which must be altered to suit exposures or other local conditions. The following are recommended.

Add for north and northwest exposure, 10%.

Add for northeast and west exposure, 7%.

Floors and ceilings exposed to weather to be figured same as wall.

Floors and ceilings exposed to unheated room to be figured as $\frac{1}{2}$ wall.

Ceilings of top floors in all buildings, except residences, to be figured as $\frac{1}{2}$ wall.

Ceilings in one story cottages, figure $\frac{1}{2}$ exposed wall.

Trane Vapor Heating

It is difficult to present any definite tabulation of chimney sizes based on radiation, because so much depends on the type of boiler used with particular reference to grate surface and flue travel. The following table will, however, be of assistance to contractors in checking up draft conditions. It gives the proper size and minimum height for good results and may be depended upon under average conditions. A contractor should never guarantee sufficient draft on smaller or shorter flues.

| Rated Capacity | Soft Coal | Hard Coal or Gas |
|-----------------------|-----------------|------------------|
| 250- 400 sq. ft..... | 8" x 12" x 35' | 8" x 8" x 35' |
| 400- 700 sq. ft..... | 8" x 12" x 40' | 8" x 12" x 40' |
| 700- 900 sq. ft..... | 12" x 12" x 40' | 12" x 12" x 40' |
| 900-1200 sq. ft..... | 12" x 12" x 45' | 12" x 12" x 45' |
| 1200-1400 sq. ft..... | 12" x 16" x 45' | 12" x 16" x 45' |
| 1400-1600 sq. ft..... | 16" x 16" x 45' | 12" x 16" x 45' |
| 1600-2000 sq. ft..... | 16" x 20" x 50' | 12" x 16" x 50' |
| 2000-3000 sq. ft..... | 20" x 20" x 55' | 16" x 16" x 55' |



Trane Vapor Heating Data

Table No 1

Divisors for Inside Temperature of 70 Degrees

| Lowest outside temperature | +20 | +15 | +10 | +5 | 0 | -5 | -10 | -15 | -20 | -25 | -30 | -35 |
|----------------------------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|
| Divide contents by..... | 251 | 228 | 210 | 195 | 180 | 169 | 158 | 148 | 140 | 133 | 126 | 120 |
| Divide glass by..... | 4.6 | 4.2 | 3.8 | 3.5 | 3.3 | 3.0 | 2.9 | 2.7 | 2.6 | 2.4 | 2.3 | 2.2 |
| Divide net wall by..... | 14.8 | 13.5 | 12.4 | 11.0 | 10.6 | 9.9 | 9.3 | 8.7 | 8.3 | 7.8 | 7.4 | 7.0 |

Table No 2

Multipliers for Inside Temperatures Other Than 70 Degrees

| Required Temperature | Lowest Outside Temperature | | | | | | | | | | | |
|----------------------|----------------------------|------|------|------|------|------|------|------|------|------|------|------|
| | +20 | +15 | +10 | +5 | 0 | -5 | -10 | -15 | -20 | -25 | -30 | -35 |
| 35 | .24 | .29 | .33 | .37 | .40 | .43 | .45 | .47 | .49 | .50 | .51 | .54 |
| 40 | .32 | .37 | .41 | .44 | .47 | .49 | .51 | .52 | .54 | .55 | .57 | .61 |
| 45 | .42 | .46 | .49 | .52 | .54 | .57 | .58 | .59 | .60 | .61 | .63 | .67 |
| 50 | .52 | .55 | .58 | .60 | .62 | .64 | .65 | .66 | .66 | .67 | .69 | .71 |
| 55 | .63 | .66 | .68 | .70 | .71 | .72 | .73 | .74 | .75 | .75 | .76 | .79 |
| 60 | .74 | .76 | .77 | .79 | .80 | .80 | .81 | .82 | .83 | .83 | .84 | .85 |
| 65 | .87 | .88 | .89 | .89 | .89 | .89 | .90 | .91 | .91 | .91 | .92 | .92 |
| 75 | 1.14 | 1.13 | 1.13 | 1.12 | 1.12 | 1.11 | 1.10 | 1.10 | 1.09 | 1.09 | 1.09 | 1.09 |
| 80 | 1.29 | 1.27 | 1.25 | 1.24 | 1.23 | 1.22 | 1.21 | 1.20 | 1.19 | 1.18 | 1.18 | 1.18 |
| 85 | 1.46 | 1.43 | 1.40 | 1.38 | 1.36 | 1.34 | 1.34 | 1.30 | 1.29 | 1.29 | 1.29 | 1.28 |

Useful Information Concerning Hot Water Heating

Estimating

HEATING SURFACE. The following rule for estimating the amount of direct radiation necessary for heating the room in which the radiators are placed to 70 degrees in zero weather, with the temperature of the water 180 degrees at the boiler, is based upon good practice for houses of average good construction and exposure.

For table giving percentages to add or deduct for different temperatures, see page 158.

Divisors for Inside Temperature of 70 Degrees

| Lowest outside temperature..... | +20 | +15 | +10 | +5 | 0 | -5 | -10 | -15 | -20 | -25 | -30 | -35 |
|---------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Divide contents by..... | 167 | 152 | 140 | 130 | 120 | 113 | 105 | 100 | 93 | 89 | 84 | 80 |
| Divide glass by..... | 3.06 | 2.80 | 2.55 | 2.33 | 2.20 | 2 | 1.93 | 1.80 | 1.73 | 1.60 | 1.53 | 1.46 |
| Divide net wall by..... | 10 | 9 | 8 | 7.50 | 7 | 6.60 | 6.20 | 5.80 | 5.50 | 5.20 | 5.00 | 4.66 |

Size of Mains for Hot Water

Rule. Square the diameter of the pipe and multiply the result by .50, which will give the number of square feet of water radiation that it will supply.

| | | | | | | | |
|-----------------------------------|------------------------------------|-----------------------------------|------------------------------------|-----------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| 2" 150 to 200 Sq. Ft. | 2½" 250 to 350 Sq. Ft. | 3" 450 to 500 Sq. Ft. | 3½" 550 to 650 Sq. Ft. | 4" 700 to 850 Sq. Ft. | 4½" 900 to 1100 Sq. Ft. | 5" 1200 to 1350 Sq. Ft. | 6" 1600 to 1900 Sq. Ft. |
|-----------------------------------|------------------------------------|-----------------------------------|------------------------------------|-----------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|

List Prices of Trane Radiator Specialties

Trane 14 Corrugation Bellows Radiator Traps

| | | | |
|----------------|------|--------------------------|--------|
| $\frac{1}{2}$ | Inch | Angle..... | \$ 5.4 |
| $\frac{1}{2}$ | " | Straightway..... | 5.9 |
| $\frac{1}{2}$ | " | R.H. or L.H. Corner..... | 5.9 |
| $\frac{3}{4}$ | " | Angle..... | 9.0 |
| $\frac{3}{4}$ | " | Straightway..... | 9.0 |
| $\frac{3}{4}$ | " | R.H. or L.H. Corner..... | 9.0 |
| 1 | " | Angle Only..... | 14.0 |
| $1\frac{1}{4}$ | " | " " Blast Trap..... | 43.5 |
| $1\frac{1}{2}$ | " | " " " "..... | 49.5 |
| 2 | " | " " " "..... | 55.0 |

| | | | |
|---------------|------|--------------------------------|--------|
| $\frac{1}{2}$ | Inch | Return Fittings..... | \$ 1.8 |
| $\frac{3}{4}$ | " | No. 1 & 2 Return Fittings..... | 2.0 |

Trane Bellows Packless Valves

| | | |
|----------------|-----------|--------|
| $\frac{1}{2}$ | Inch..... | \$ 5.0 |
| $\frac{3}{4}$ | "..... | 5.0 |
| 1 | "..... | 5.7 |
| $1\frac{1}{4}$ | "..... | 7.6 |

When Shipping, Round Wheel Valves will be sent unless
Lever Handled are specified.

Trane Packless Lock & Shield Radiator Valves

| | | |
|------------------------------------|-----------|--------|
| $\frac{1}{2}$ | Inch..... | \$ 5.4 |
| $\frac{3}{4}$ | "..... | 5.4 |
| 1 | "..... | 6.2 |
| $1\frac{1}{4}$ | "..... | 8.0 |
| Keys for Lock & Shield Valves..... | | .4 |

Trane High Pressure Bellows Traps For Working Pressures up to 125 lbs.

State Pressure when ordering.

| | | | |
|---------------|------|-----------------|--------|
| $\frac{1}{2}$ | Inch | Angle Only..... | \$ 9.0 |
| $\frac{3}{4}$ | " | " "..... | 12.0 |
| 1 | " | " "..... | 20.0 |

List Prices of Trane Boiler Specialties

Damper Regulators

| | |
|------------------------------------|---------|
| No. 1 Vapor Damper Regulators..... | \$23.00 |
| No. 2 " " " " | 33.00 |

Trane Receivers

| | |
|---------------------------------------|-------|
| No. 1 Receiver (Cap. 400 sq. ft)..... | 23.00 |
| No. 2 " (Cap. 2000 sq. ft.)..... | 33.00 |

Trane Direct Return Traps

| | |
|---|---------|
| No. 2 Return Trap (Cap. 2000 lbs.)..... | \$55.00 |
| No. 3 " " (Cap. 4000 lbs.)..... | 75.00 |
| No. 4 " " (Cap. 6000 lbs.)..... | 140.00 |
| No. 5 " " (Cap. 10000 lbs.)..... | 340.00 |
| No. 6 " " (Cap. 15000 lbs.)..... | 500.00 |
| No. 7 " " (Cap. 18000 lbs.)..... | 540.00 |
| Gauge Glass Complete for Direct Return Traps... | \$ 5.00 |

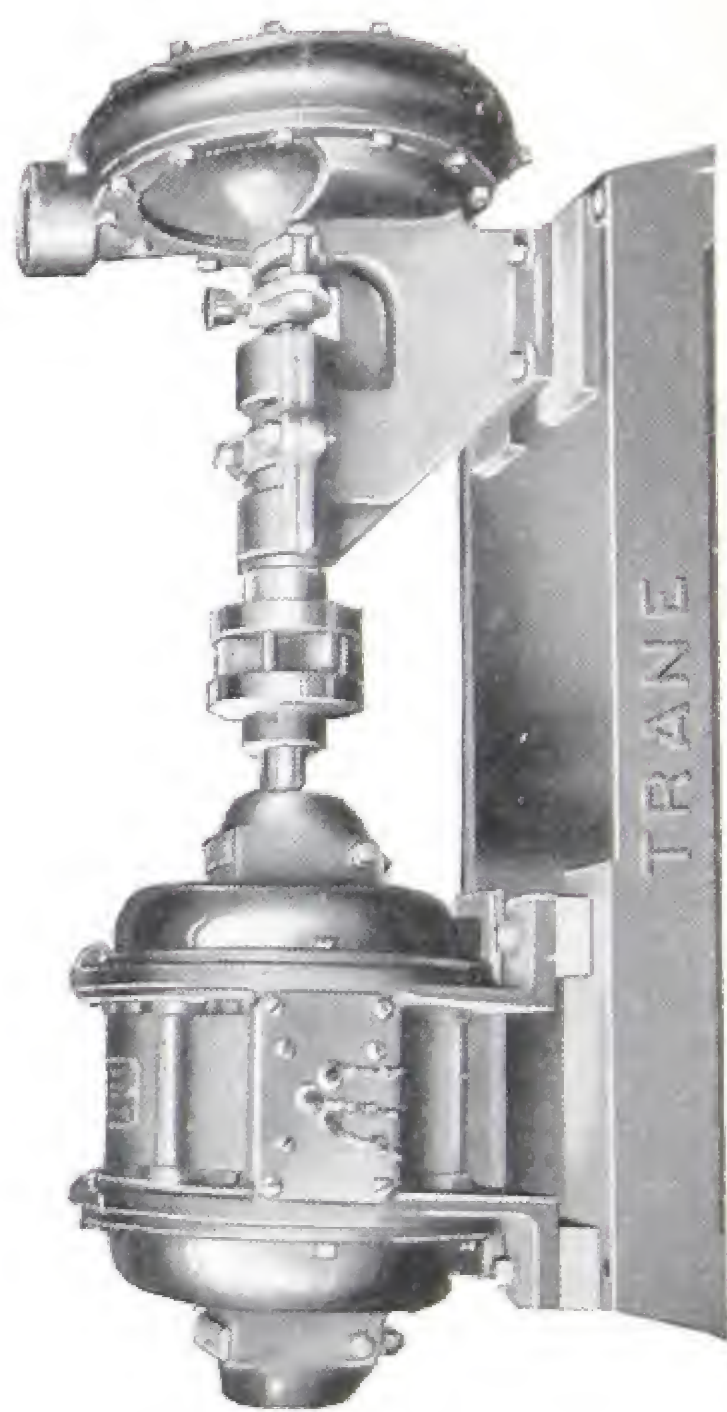
| | |
|---------------------------|---------|
| Compound Vapor Gauge..... | \$ 7.00 |
| 30 Inch Vacuum Gauge..... | 6.50 |

Trane Vents

| | |
|--|---------|
| Quick Vent Valve..... | \$ 4.65 |
| Float Vent Valve..... | 10.00 |
| Float Vent, Large Size. Capacity 5000 sq. ft.... | 28.00 |

Trane Pumps and Motors

Circulation Pumps—High Pressure Pumps House Pumps—Booster Pumps



All Trane Pumps, because of their distinct design, operate against a wide pressure range. All will operate against high pressures with varying capacities and within certain limitations, depending upon the design of the pump. In the following tables the various models have been grouped within the limits for which they are recommended with an ample factor of safety in the capacities published. In selecting a pump for any given purpose, it should be understood that the minimum capacity published is the capacity at the limit of elevation or pressure for which that model is recommended, and that at lower heads or pressures this capacity in gallons per minute will increase as indicated by the capacity range as published for each model.

Performance Table of Booster and Circulating Pumps at 1425 R.P.M.

| G.P.M. | Feet Head | 10 | 20 | 30 | 40 | 50 | 60 | 80 | 100 | 125 | 150 | 175 |
|--------|-----------|----------------------|------------------------|----------------------|-----------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| 5 | Pump H.P. | C-1 $\frac{1}{4}$ | C-1 $\frac{1}{4}$ | C-2 $\frac{1}{4}$ | C-3 $\frac{1}{2}$ | C-6 $\frac{3}{4}$ | C-6 $\frac{3}{4}$ | C-6 $\frac{3}{4}$ | C-6 $\frac{3}{4}$ | | | |
| 10 | Pump H.P. | C-1 $\frac{1}{4}$ | C-1 $\frac{1}{4}$ | C-2 $\frac{1}{2}$ | C-3 $\frac{3}{4}$ | C-6 $\frac{3}{4}$ | C-6 $\frac{3}{4}$ | C-6 $\frac{3}{4}$ | C-7 $1\frac{1}{2}$ | | | |
| 20 | Pump H.P. | C-1 $\frac{1}{4}$ | C-2 $\frac{1}{2}$ | C-2 $\frac{1}{2}$ | C-4 $\frac{3}{4}$ | C-7 1 | C-7 1 | C-7 $1\frac{1}{2}$ | C-8 2 | C-8 3 | C-8 3 | C-8 3 |
| 30 | Pump H.P. | C-2 $\frac{1}{2}$ | C-2 $\frac{1}{2}$ | C-4 $\frac{3}{4}$ | C-5 $1\frac{1}{2}$ | C-9 $1\frac{1}{2}$ | C-9 2 | C-9 3 | C-9 3 | | | |
| 50 | Pump H.P. | C-4 $\frac{3}{4}$ | C-4 $\frac{3}{4}$ | C-4 1 | C-9 $1\frac{1}{2}$ | C-10 2 | C-5 3 | C-11 5 | C-11 $7\frac{1}{2}$ | C-11 $7\frac{1}{2}$ | C-11 $7\frac{1}{2}$ | C-11 $7\frac{1}{2}$ |
| 75 | Pump H.P. | C-5 2 | C-5 2 | C-5 2 | C-5 3 | C-5 3 | C-5 3 | C-16 $7\frac{1}{2}$ | C-16 $7\frac{1}{2}$ | | | |
| 100 | Pump H.P. | C-14 1 | C-14 $1\frac{1}{2}$ | C-14 2 | C-14 3 | C-14 3 | C-16 5 | C-16 $7\frac{1}{2}$ | C-16 10 | | | |
| 125 | Pump H.P. | C-16 2 | C-16 2 | C-16 2 | C-16 5 | C-16 5 | C-16 5 | C-16 $7\frac{1}{2}$ | C-16 10 | | | |
| 150 | Pump H.P. | C-16 2 | C-16 2 | C-16 3 | C-16 5 | C-16 5 | C-16 $7\frac{1}{2}$ | C-16 $7\frac{1}{2}$ | C-16 10 | | | |
| 200 | Pump H.P. | C-16 3 | C-16 3 | C-16 3 | C-16 5 | C-16 $7\frac{1}{2}$ | C-16 $7\frac{1}{2}$ | C-16 10 | | | | |

Note:—See regular pump prices sheet for prices. See separate blue print for motor prices.

List Prices of Booster and Circulating Pumps Pump and Base only

| Size | Price | Suction | Discharge | App. Ship. Wt. |
|------|----------|---------|-----------|-------------------|
| C-1 | \$ 75.00 | 1" | 1" | 95 lbs. |
| C-2 | 85.00 | 1" | 1" | 110 " |
| C-3 | 95.00 | 1 1/4" | 1 1/4" | 120 " |
| C-4 | 150.00 | 1 1/2" | 1 1/2" | 130 " |
| C-5 | 170.00 | 2" | 1 1/2" | 150 " |
| C-6 | 230.00 | 1 1/4" | 1" | 125 " |
| C-7 | 250.00 | 1 1/2" | 1 1/4" | 140 " |
| C-8 | 330.00 | 2" | 1 1/2" | 300 " |
| C-9 | 265.00 | 2" | 1 1/8" | 225 " |
| C-10 | 275.00 | 2 1/2" | 2" | 300 " |
| C-11 | 460.00 | 2 1/2" | 2 1/2" | 800 " |
| C-12 | 530.00 | 2 1/2" | 2 1/2" | 800 " |
| C-13 | 200.00 | 2 1/2" | 2" | 275 " |
| C-14 | 250.00 | 3 1/2" | 2 1/2" | 370 " |

IMPORTANT

When ordering, always state the gals. per min., feet head and kind of liquid to be pumped, in addition to the pump number.

Prices include: Pump, base, coupling, and mounting of motor, also a C.P. 1920 Thermal Protective Cut-out with the following motors:—

Single Phase—Up to and including 1 1/2 H.P.

3 Phase—Up to and including 3 H.P.

For larger sizes protection can be obtained with the switches listed on motor sheet for which net addition must be made.

Net Prices of Motors

for

Trane Circulating Pumps

Effective Oct. 1st, 1925

| H.P. | 25 Cycles | 1425 R.P.M. | 60 Cycles | 1720 R.P.M. | Direct Current |
|------------------|-----------------|----------------|-----------------|----------------|---------------------|
| | Single Phase | Poly- phase | Single Phase | Poly- phase | 115 or 230 volts |
| $\frac{1}{4}$ | \$ 56.35 | \$ 71.30 | \$ 42.55 | \$ 57.50 | |
| $\frac{1}{2}$ | 82.80 | 86.25 | 62.10 | 57.50 | \$ 93.15 |
| $\frac{3}{4}$ | 101.20 | 96.60 | 85.10 | 63.25 | 98.90 |
| 1 | 115.00 | 96.60 | 104.65 | 67.85 | 102.35 |
| $1\frac{1}{2}$ | 159.85 | 106.95 | 136.85 | 80.50 | 126.50 |
| 2 | 188.60 | 110.40 | 150.65 | 80.50 | 126.50 |
| 3 | 233.45 | 117.30 | 188.60 | 102.35 | 171.35 |
| 5 | 316.25 | 172.50 | 246.10 | 126.50 | 226.55 |
| * $7\frac{1}{2}$ | 425.50 | 345.00 | 336.95 | 262.20 | 328.90 |

*Prices for $7\frac{1}{2}$ H.P. motors include manual starters. For all other sizes make the following net additions using "Automatic" prices where control is by float switch — "Hand" prices when manually controlled.

Net Prices for Hand and Automatic Switches

| H.P. | 25 or 60 Cycles Single Phase | | 25 or 60 Cycles 2 or 3 Phase | | Direct Current 115 or 230 volts | |
|----------------|---------------------------------|----------------|---------------------------------|----------------|------------------------------------|----------------|
| | Hand | Auto- matic | Hand | Auto- matic | Hand | Auto- matic |
| $\frac{1}{4}$ | \$13 | \$41 | \$13 | \$41 | \$13 | \$31 |
| $\frac{1}{2}$ | 13 | 41 | 13 | 41 | 13 | 31 |
| $\frac{3}{4}$ | 13 | 41 | 13 | 41 | 13 | 31 |
| 1 | 13 | 41 | 13 | 41 | 13 | 31 |
| $1\frac{1}{2}$ | 13 | 41 | 13 | 41 | 20 | 31 |
| 2 | 41 | 41 | 13 | 41 | 20 | 31 |
| 3 | 41 | 41 | 13 | 41 | 20 | 34 |
| 5 | 41 | 41 | 13 | 41 | 24 | 42 |

Hand switches for A.C. provide overload and phase protection.

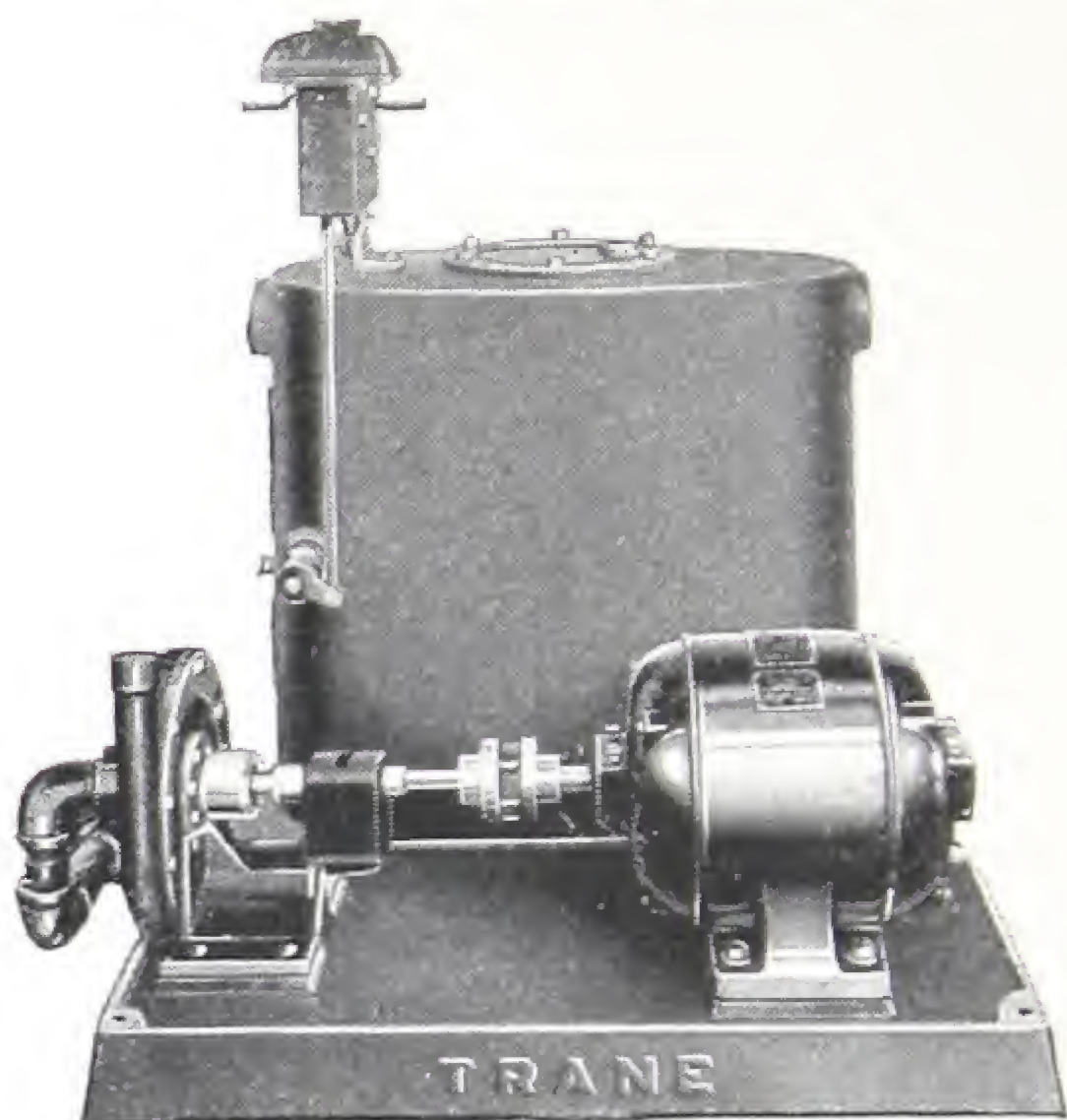
Auto switches for A.C. provide overload and undervoltage release.

Hand switches for D.C. provide undervoltage release.

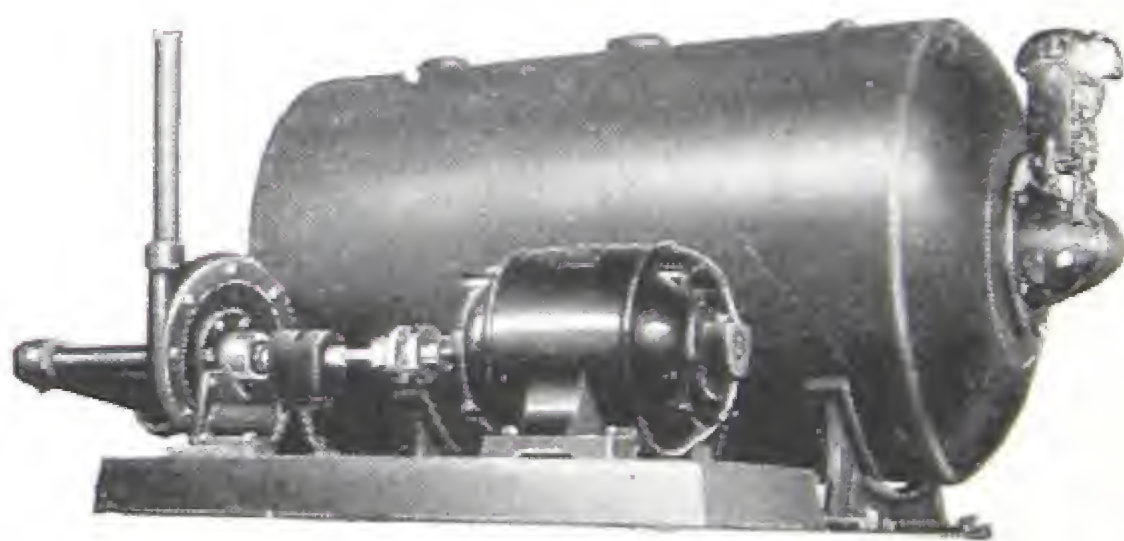
Auto. " " " " " "

Trane

Condensation Pumps



This style unit, with cast iron tank, furnished for
4,000 sq. ft. of radiation



This style unit, with steel tank, furnished for 6,000-
30,000 sq. ft. of radiation

Important Motor Note

The list prices given are for units equipped with 110 or 220 volt direct current, or 60 cycle, single or three phase A. C. motors, up to and including $\frac{3}{4}$ H. P. Motors, above $\frac{3}{4}$ H. P. are A. C., 110 or 220 volts, 60 cycles, three phase. Motors for other types of current can be furnished at an additional price. Prices subject to change without notice.

60 Cycle List Prices

of

Trane Condensation Pumps

Effective October 1st, 1925

| Pump No. | Cap. in Sq. Ft. | Cap. in G.P.M. | Press at Pump | H. P. | Price | Re-ceiver Cap. | Ship. ping weight |
|----------|-----------------|----------------|---------------|-------|-------|----------------|-------------------|
| 410 | 4000 | 6- 8 | 10 | 1/4 | \$258 | 6 Gals. | 475 |
| 415 | 4000 | 6- 8 | 15 | 1/2 | 294 | 6 " | 475 |
| 420 | 4000 | 6- 8 | 20 | 1/2 | 310 | 6 " | 475 |
| 610 | 6000 | 9-12 | 10 | 1/4 | 290 | 22 " | 600 |
| 615 | 6000 | 9-12 | 15 | 1/2 | 325 | 22 " | 600 |
| 620 | 6000 | 9-12 | 20 | 3/4 | 365 | 22 " | 600 |
| 810 | 8000 | 12-16 | 10 | 1/2 | 325 | 22 " | 700 |
| 815 | 8000 | 12-16 | 15 | 3/4 | 365 | 22 " | 700 |
| 820 | 8000 | 12-16 | 20 | 1 | 340 | 22 " | 750 |
| 1010 | 10000 | 15-20 | 10 | 1/2 | 340 | 22 " | 750 |
| 1015 | 10000 | 15-20 | 15 | 3/4 | 380 | 22 " | 750 |
| 1020 | 10000 | 15-20 | 20 | 1 | 365 | 22 " | 750 |
| 1510 | 15000 | 25-30 | 10 | 3/4 | 390 | 30 " | 750 |
| 1515 | 15000 | 25-30 | 15 | 1 | 360 | 30 " | 750 |
| 1520 | 15000 | 25-30 | 20 | 1 | 385 | 30 " | 750 |
| 2010 | 20000 | 30-40 | 10 | 3/4 | 410 | 30 " | 750 |
| 2015 | 20000 | 30-40 | 15 | 1 | 380 | 30 " | 850 |
| 2020 | 20000 | 30-40 | 20 | 2 | 470 | 30 " | 850 |
| 2510 | 25000 | 40-50 | 10 | 1 | 400 | 30 " | 800 |
| 2515 | 25000 | 40-50 | 15 | 1 1/2 | 475 | 30 " | 850 |
| 2520 | 25000 | 40-50 | 20 | 2 | 495 | 30 " | 850 |
| 3010 | 30000 | 50-60 | 10 | 1 | 415 | 30 " | 850 |
| 3015 | 30000 | 50-60 | 15 | 1 1/2 | 500 | 30 " | 900 |
| 3020 | 30000 | 50-60 | 20 | 2 | 520 | 30 " | 900 |

Motor Notice

Prices are for single phase, 60 cycle motors up to and including 3/4 H.P. 1 H.P. and above are for 3 phase, 60 cycle motors. If 1 phase is required in these sizes make the following net additions:

| | | |
|-------|----------|----------|
| 1 | H.P..... | \$ 40.00 |
| 1 1/2 | H.P..... | 50.00 |
| 2 | H.P..... | 96.00 |
| 3 | H.P..... | 116.00 |

Standard Starting Equipment

Polyphase motors, all sizes—C.R. 1920 Inverse Time Limit Protective Cut-out.

Single Phase up to 2 H.P.—C.R. 1920 Protective Cut-out.

Single Phase 2 H.P. and above C.R. 7006-D 4 magnetic switch having overload relay and undervoltage release.

LIST PRICES
of
Trane Single Motor Vacuum Pumps
for
POLYPHASE 60-CYCLE CURRENT

| Unit No. | Capacity in Sq. feet | Cap. in G.P.M. | Pressure At Pump | H.P. | Price | Receiver Capacity | Shipping Weight |
|----------|----------------------------|-------------------|---------------------|------|-------|----------------------|--------------------|
| R. 610 | 6000 | 9 | 10 | 1 | 600 | 13 | 550 |
| R. 615 | 6000 | 9 | 15 | 1 | 620 | 13 | 575 |
| R. 810 | 8000 | 12 | 10 | 1 | 630 | 13 | 675 |
| R. 815 | 8000 | 12 | 15 | 1½ | 700 | 13 | 725 |
| R. 1210 | 12000 | 18 | 10 | 1 | 650 | 21 | 675 |
| R. 1215 | 12000 | 18 | 15 | 1½ | 725 | 21 | 725 |
| R. 1810 | 18000 | 27 | 10 | 1½ | 740 | 21 | 725 |
| R. 1815 | 18000 | 27 | 15 | 2 | 760 | 21 | 750 |
| R. 2610 | 26000 | 39 | 10 | 2 | 780 | 28 | 775 |
| R. 2615 | 26000 | 39 | 15 | 3 | 880 | 28 | 800 |
| R. 3010 | 30000 | 45 | 10 | 2 | 810 | 28 | 775 |
| R. 3015 | 30000 | 45 | 15 | 3 | 910 | 28 | 800 |

Motor Notice

All above prices are for 2 or 3 phase motors.

For single Phase make the following **Net** additions:

| | | |
|----|------|---------|
| 1 | H.P. | \$40.00 |
| 1½ | H.P. | 46.00 |
| 2 | H.P. | 57.00 |
| 3 | H.P. | 75.00 |

Standard Equipment

Includes:—Separate Air and Water Pumps, direct connected to one motor, on cast-iron base, cast-iron receiver, float and vacuum control, strainer, vacuum gauge, vacuum breaker, pipe, fittings and valves between pumps and receiver.

Starting Equipment

2 snap switches with every pump.

1-C.R. 1920 thermal cut-out with pumps having 1 H.P. motors.

1-Automatic starter with pumps having 1½ H.P. or larger motors.

LIST PRICES
of
Trane Two-Motor Vacuum Pumps
for
60-CYCLE CURRENT

| Unit No. | Capacity in Sq. feet | Cap. in G.P.M. | Press. at Pump | Motor H.P. | | Price | Receiver Capacity | Shipping Weight |
|----------|----------------------|----------------|----------------|------------|-------|-------|-------------------|-----------------|
| | | | | Air | Water | | | |
| T. 610 | 6000 | 9 | 10 | 1½ | ¾ | 750 | 13 | 650 |
| T. 615 | 6000 | 9 | 15 | 1½ | ¾ | 770 | 13 | 650 |
| T. 810 | 8000 | 12 | 10 | 1½ | ¾ | 790 | 13 | 700 |
| T. 815 | 8000 | 12 | 15 | 1½ | 1 | 760 | 13 | 725 |
| T. 1210 | 12000 | 18 | 10 | ¾ | ¾ | 810 | 21 | 775 |
| T. 1215 | 12000 | 18 | 15 | ¾ | 1 | 780 | 21 | 800 |
| T. 1810 | 18000 | 27 | 10 | ¾ | 1 | 800 | 21 | 825 |
| T. 1815 | 18000 | 27 | 15 | ¾ | 1½ | 870 | 21 | 850 |
| T. 2610 | 18000 | 39 | 10 | 1 | 1½ | 890 | 28 | 875 |
| T. 2615 | 26000 | 39 | 15 | 1 | 2 | 960 | 28 | 900 |
| T. 3010 | 30000 | 45 | 10 | 1 | 1½ | 980 | 28 | 900 |
| T. 3015 | 30000 | 45 | 15 | 1 | 2 | 1000 | 28 | 925 |

Motor Notice

Above prices are for single or polyphase motors up to and including ¾ H.P. motors, 1 H.P. and larger are Polyphase only. Make the following **Net** additions for single phase:—

| | | |
|----|------|---------|
| 1 | H.P. | \$40.00 |
| 1½ | H.P. | 46.00 |
| 2 | H.P. | 57.00 |
| 3 | H.P. | 75.00 |

Standard Equipment

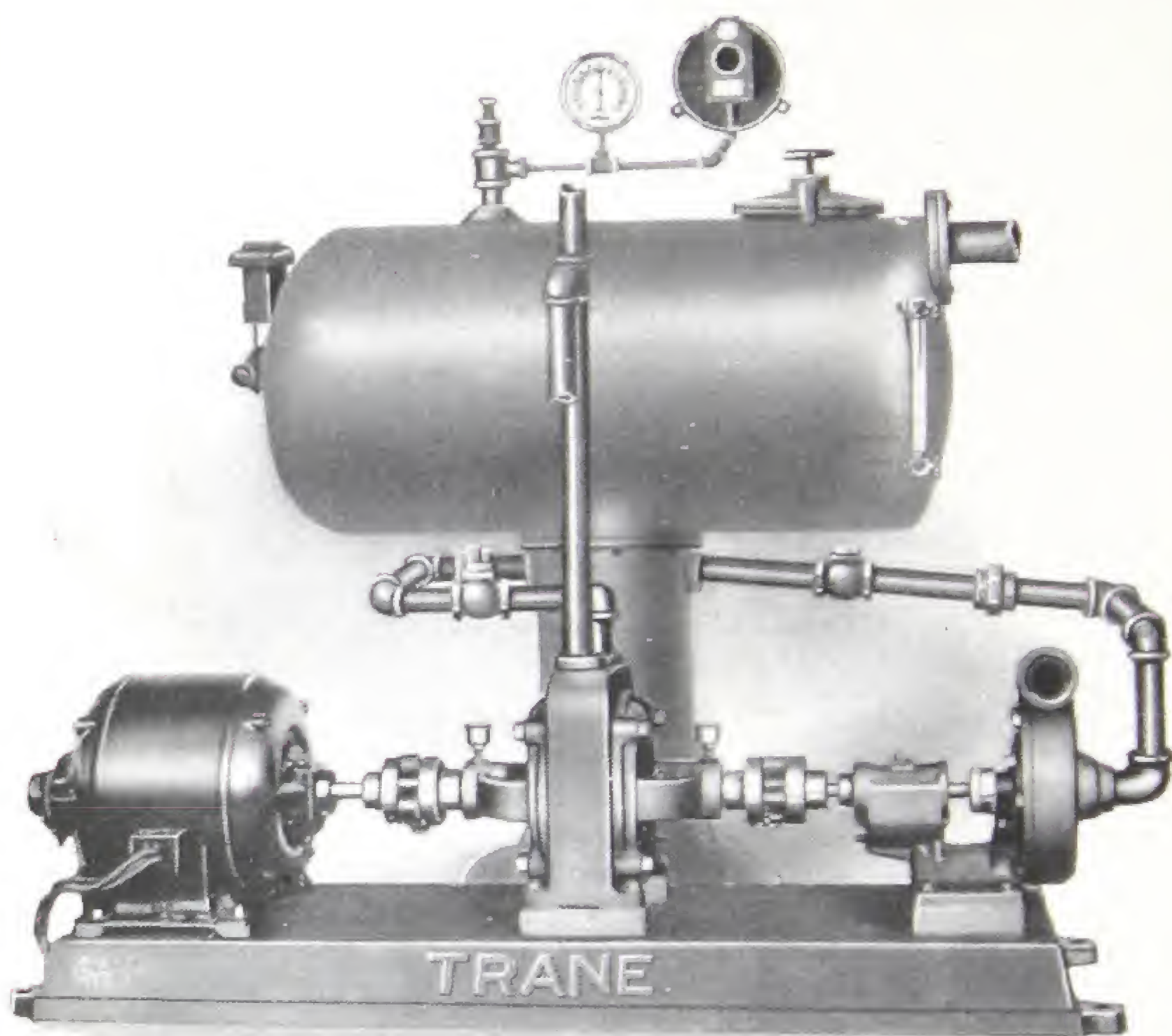
Includes:—Separate Air and Water Pumps, direct connected to separate motors on cast-iron bases, cast-iron receiver, float and vacuum control, strainer, vacuum gauge, vacuum breaker, pipe, fittings and valves between pumps and receiver.

Starting Equipment

1-C.R. 1920 thermal cut-out with pumps having 1 H.P. motors.

1-Automatic starter with pumps having 1½ H.P. or larger motors.

Trane
Standard Return Line
Vacuum & Boiler Feed Pump



See opposite page for List of sizes, capacities
and prices.

We can also supply 2 motor and 4 motor and Duplex
Types—also air line pumps and sump pumps.

Prices on application.

60 Cycle List Prices

of

Trane Return Line Vacuum Pumps

SINGLE MOTOR STYLE

Effective Oct. 1st, 1925.

| Pump No. | Cap. in Sq. ft. | Cap. in G.P.M. | Press. at Pump | H.P. | Price | Receiver Capacity | Shipping Weight |
|----------|-----------------|----------------|----------------|----------------|-------|-------------------|-----------------|
| R-610 | 6000 | 9 | 10 | $\frac{3}{4}$ | 510 | 7 gals. | 550 |
| R-615 | 6000 | 9 | 15 | 1 | 510 | 7 " | 575 |
| R-810 | 8000 | 12 | 10 | 1 | 535 | 22 " | 675 |
| R-815 | 8000 | 12 | 15 | $1\frac{1}{2}$ | 650 | 22 " | 725 |
| R-1010 | 10000 | 15 | 10 | 1 | 560 | 22 " | 675 |
| R-1015 | 10000 | 15 | 15 | $1\frac{1}{2}$ | 670 | 22 " | 725 |
| R-1210 | 12000 | 18 | 10 | 1 | 580 | 22 " | 675 |
| R-1215 | 12000 | 18 | 15 | $1\frac{1}{2}$ | 690 | 22 " | 725 |
| R-1610 | 16000 | 24 | 10 | $1\frac{1}{2}$ | 680 | 30 " | 725 |
| R-1615 | 16000 | 24 | 15 | 2 | 715 | 30 " | 750 |
| R-1810 | 18000 | 27 | 10 | $1\frac{1}{2}$ | 700 | 30 " | 725 |
| R-1815 | 18000 | 27 | 15 | 2 | 740 | 30 " | 750 |
| R-2610 | 26000 | 30 | 10 | 2 | 735 | 30 " | 775 |
| R-2615 | 26000 | 30 | 15 | 3 | 820 | 30 " | 800 |

MOTOR NOTICE

Prices are for single phase, 60 cycle motors up to and including $\frac{3}{4}$ H. P. 1 H. P. and above are for 3 phase, 60 cycle motors, if 1 phase is required in these sizes, make the following net additions:—

| | | |
|----------------|------|---------|
| 1 | H.P. | \$40.00 |
| $1\frac{1}{2}$ | H.P. | 50.00 |
| 2 | H.P. | 61.00 |
| 3 | H.P. | 81.00 |

STANDARD EQUIPMENT

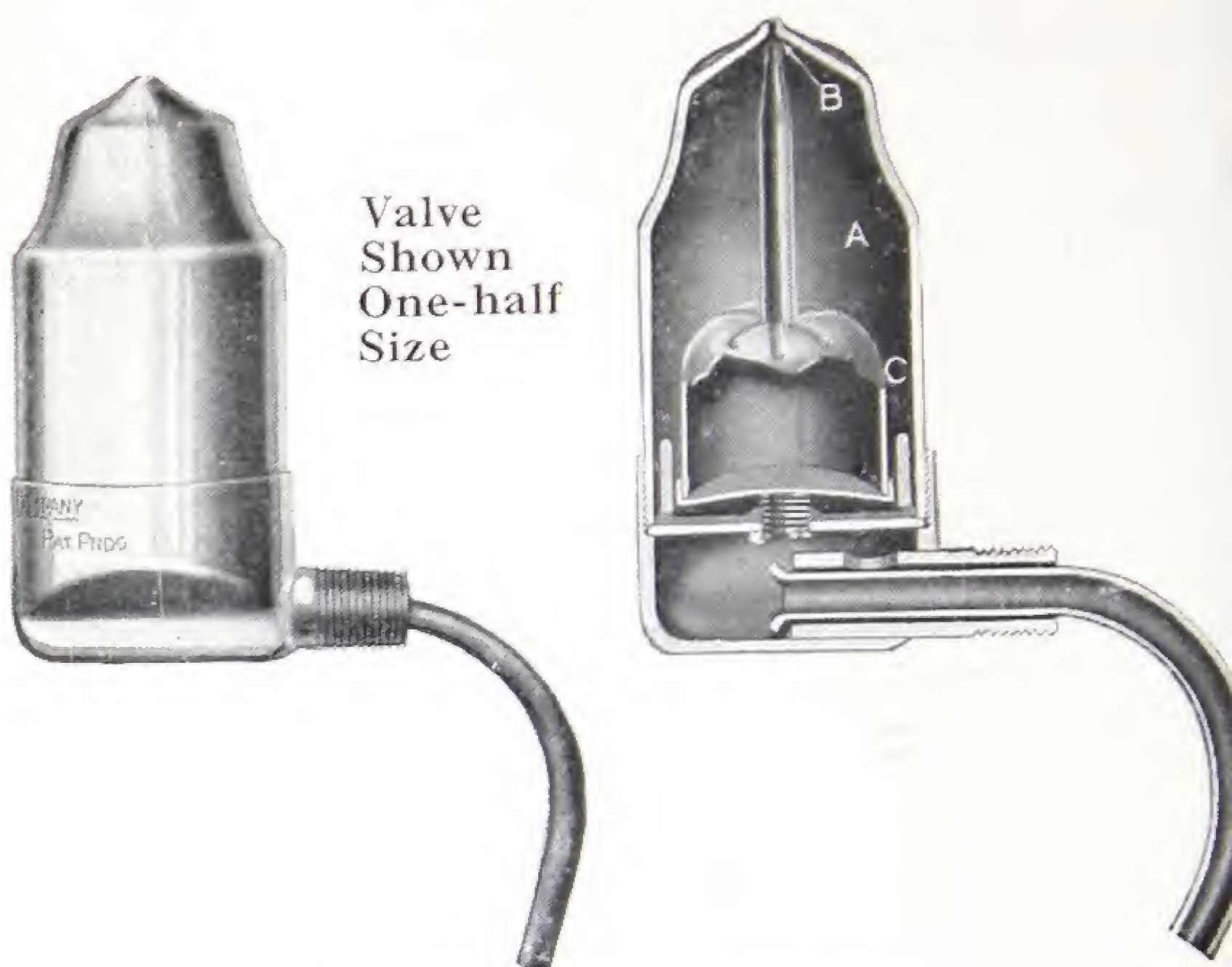
Above prices include:—Separate Air and Water Pumps direct connected to one motor and mounted on cast iron base. Receiver, Float Switch, Vacuum Switch, Vacuum Gauge, Relief Valve, Strainer and the following—

STARTING EQUIPMENT

With Motors up to and including 1 H. P. a C. R. 1920 Protective Cut-Out and two double pole snap switches are furnished. With motors $1\frac{1}{2}$ H. P. and over, a magnetic switch having overload relays and undervoltage release is supplied, also two snap switches

The Ideal Airid Siphon Valve

Stock No. 500



Valve
Shown
One-half
Size

Unfailing and Automatic

The IDEAL AIRID Siphon Valve will automatically rid any steam radiator of air under any conditions which would permit venting by hand. It opens quickly to allow any pocket of air to escape, yet closes instantly should water or steam reach the valve. This means complete venting of the radiator—a saving in coal by preventing unnecessary steam pressure to force out the air—full efficiency of every radiator—the whole quota of heat to each room—insurance that your boiler and radiators will do all you expect of them.

All-Metal Construction

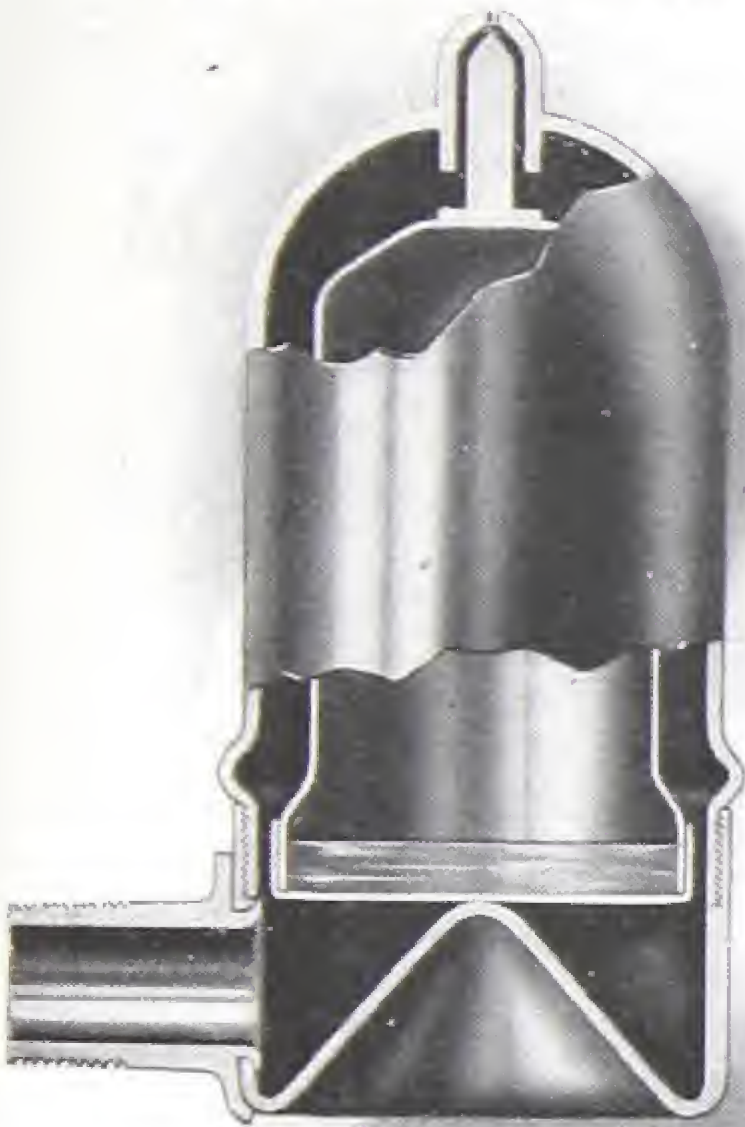
The IDEAL AIRID Siphon Valve does not sputter or hiss steam. It prevents damage to floors, walls and ceiling from water or steam leaks. It is simple in construction, made entirely of metal, and has no perishable parts to wear. It requires no adjustment. No attention is needed to insure proper operations at all times. Tenants cannot "tamper" with it, an important feature to owners of apartments, stores, office buildings and hotels.

List Price, \$3.00

Arco Automatic Air Valve

Stock No. 499

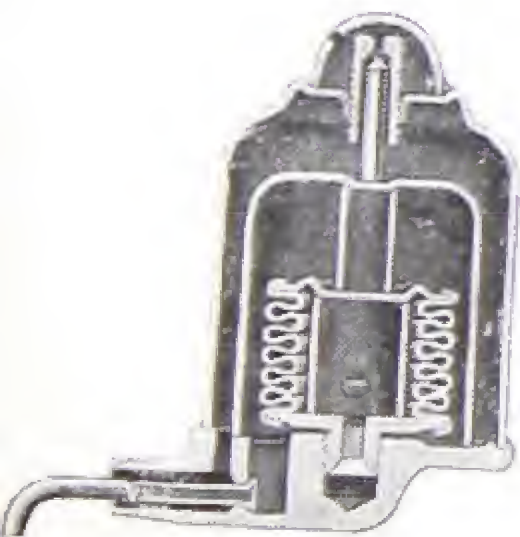
The Arco Automatic Air Valve is made entirely of the best steam metal, eliminating the objectionable rubber expansion post common to most valves of this class.



In the shell of the valve is a sealed metal float with a flexible bottom. This float is partially filled under vacuum, with a heat-sensitive liquid which vaporizes at 180 degrees, but is liquid at temperatures below 180 degrees. When cold the valve is open, freely venting the Radiator of accumulated air. When steam reaches the valve vaporizing of the float liquid expands the flexible bottom in the float, and closes the valve. When the valve cools below 180 degrees the float vapor condenses and the flexible bottom contracts, thus opening the valve. The sensitiveness of the valve in this respect insures the complete elimination of air from the Radiator to which it is attached. List Price ea. \$2.50.

Sylphon Automatic Air Valve

No 536



No air in the radiator.
No cold loops.
No hissing or sputtering.
No spitting of water.
Positive in operation.
Pleasing in design.
Rigid in construction.
No adjustment necessary.

List Price ea \$3.50

Automatic Steam Air Valves



Jenkins Pattern ea. \$1.10
with drip cups ea. \$1.60



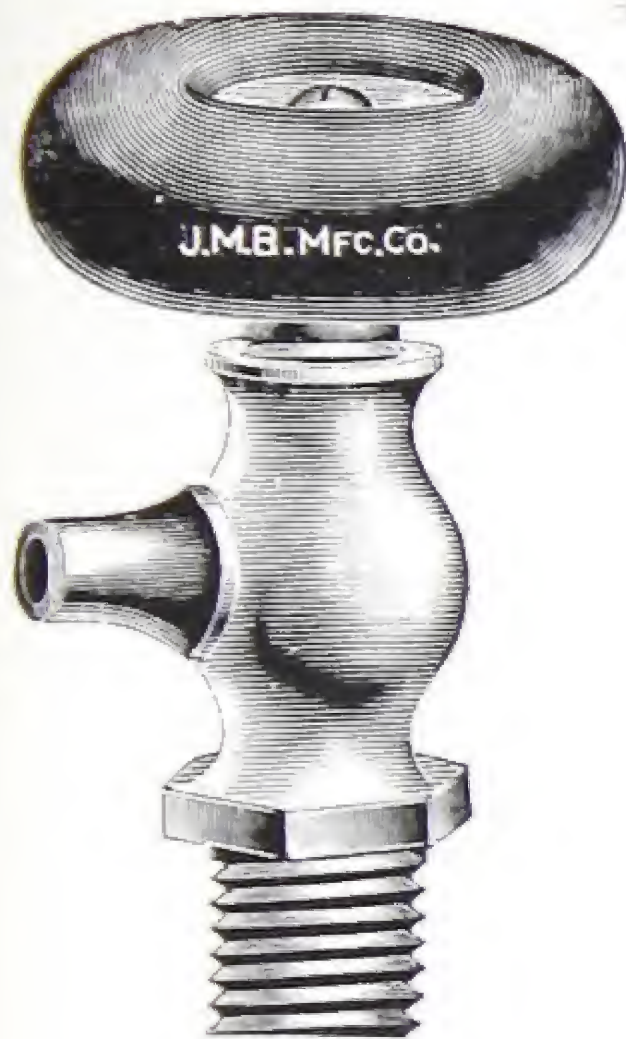
Dole Syphon ea. \$2.25



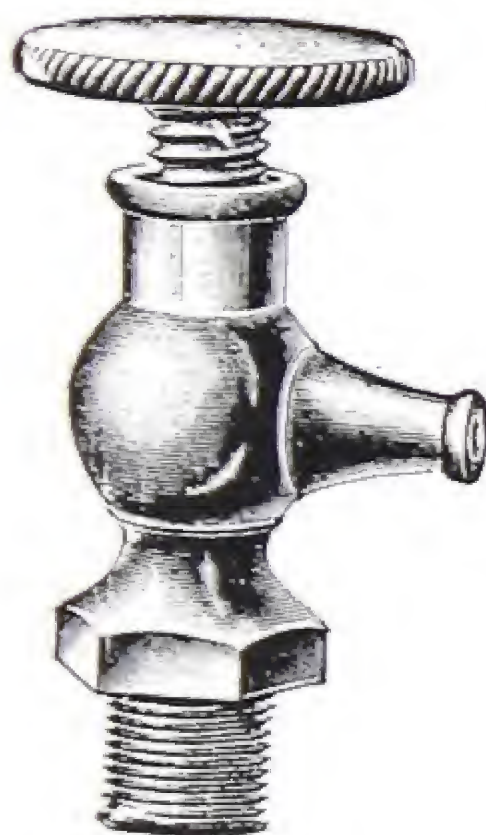
Royal ea. 80c

Air Valves

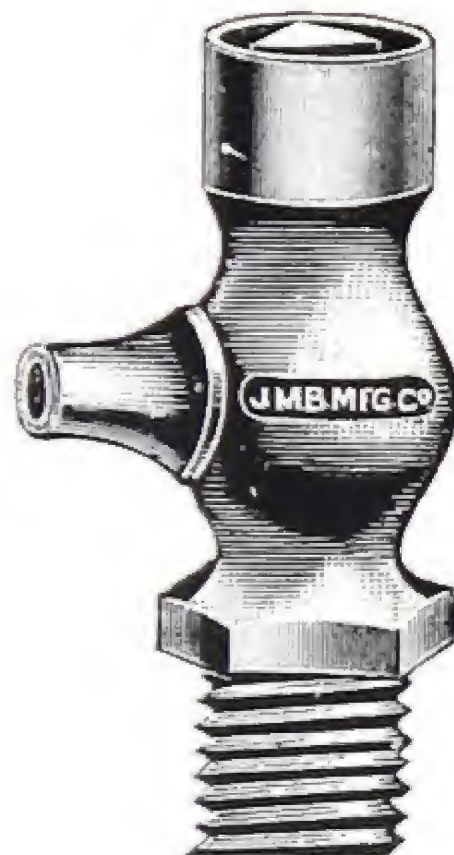
For Hot Water Radiators



E1322



E1323



E1324

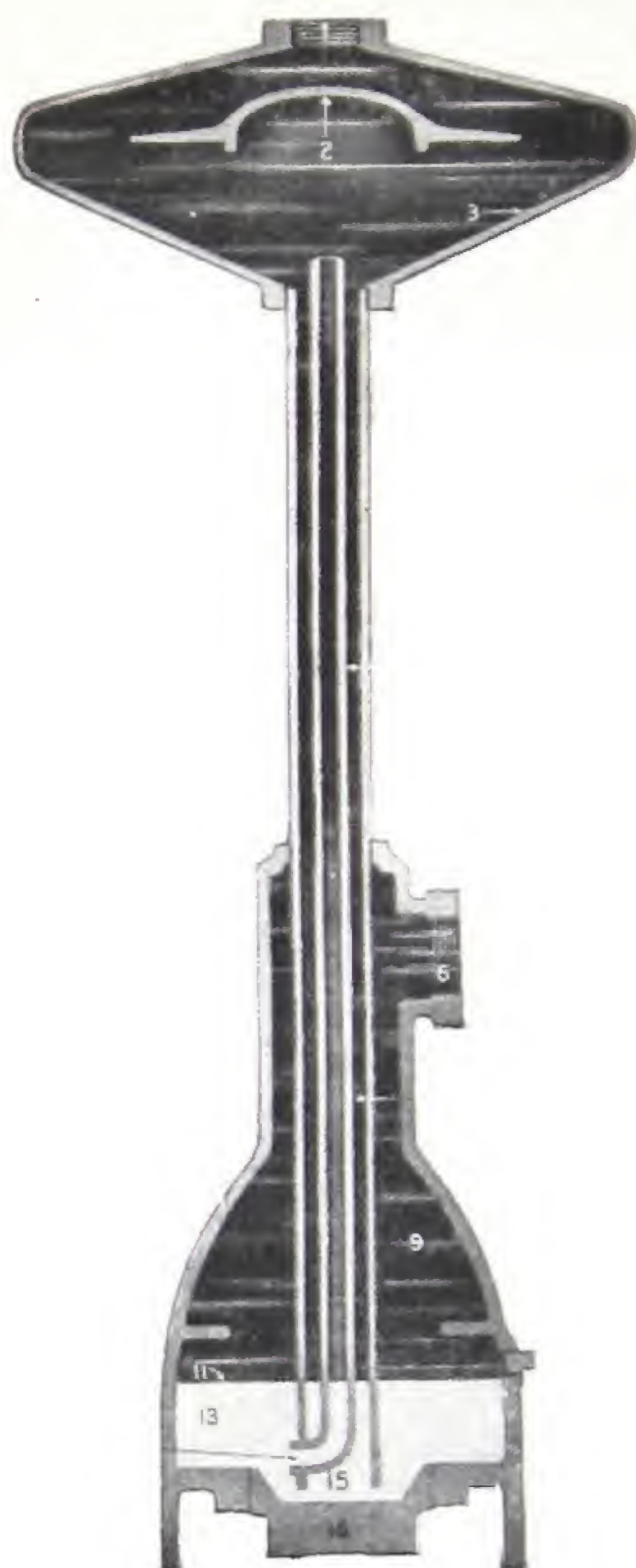
List Prices

| | | |
|---|-------------------------|-------------------------|
| E1319—Rough Brass, Square Head, Doz... | $\frac{1}{3}$ \$3.36 | $\frac{1}{4}$ \$3.84 |
| E1321—N.P. Brass, Square Head, Doz..... | 4.08 | 4.56 |
| E1322—N.P., Wood Wheel, Doz..... | 4.50 | 4.70 |
| E1323—N.P., Milled Doz..... | 4.50 | 4.70 |
| E1324—N.P., Lock Shield..... | 5.50 | 5.80 |
| E1324—Extra Key for Do. | 2.40 | 2.40 |

Two keys sent with each doz. air cocks.

Honeywell Heat Generators

For Hot-Water Heating Outfits



These Generators are designed to meet the demand for a device to quicken the circulation in hot-water heating jobs. When connected to the piping of an ordinary gravity this Generator seals the circuit and permits the generation of a slight pressure up to 10 pounds at which point it relieves itself through the operation of a mercury seal, eliminating the element of danger. The tendencies of this slight pressure are: First, to increase the circulation; second, to widen the range of temperatures to a point equal to that of steam; third, to accomplish an economy in fuel.

The pressure created by this Generator is calculated to force the water through any part of a defective piping system where the circulation is sluggish under ordinary gravity conditions. It is simple to install and is applicable to both old and new heating plants.

Sectional outline view herewith shows mercury seal, connections to system, equalizing pipe and deflecting plate.

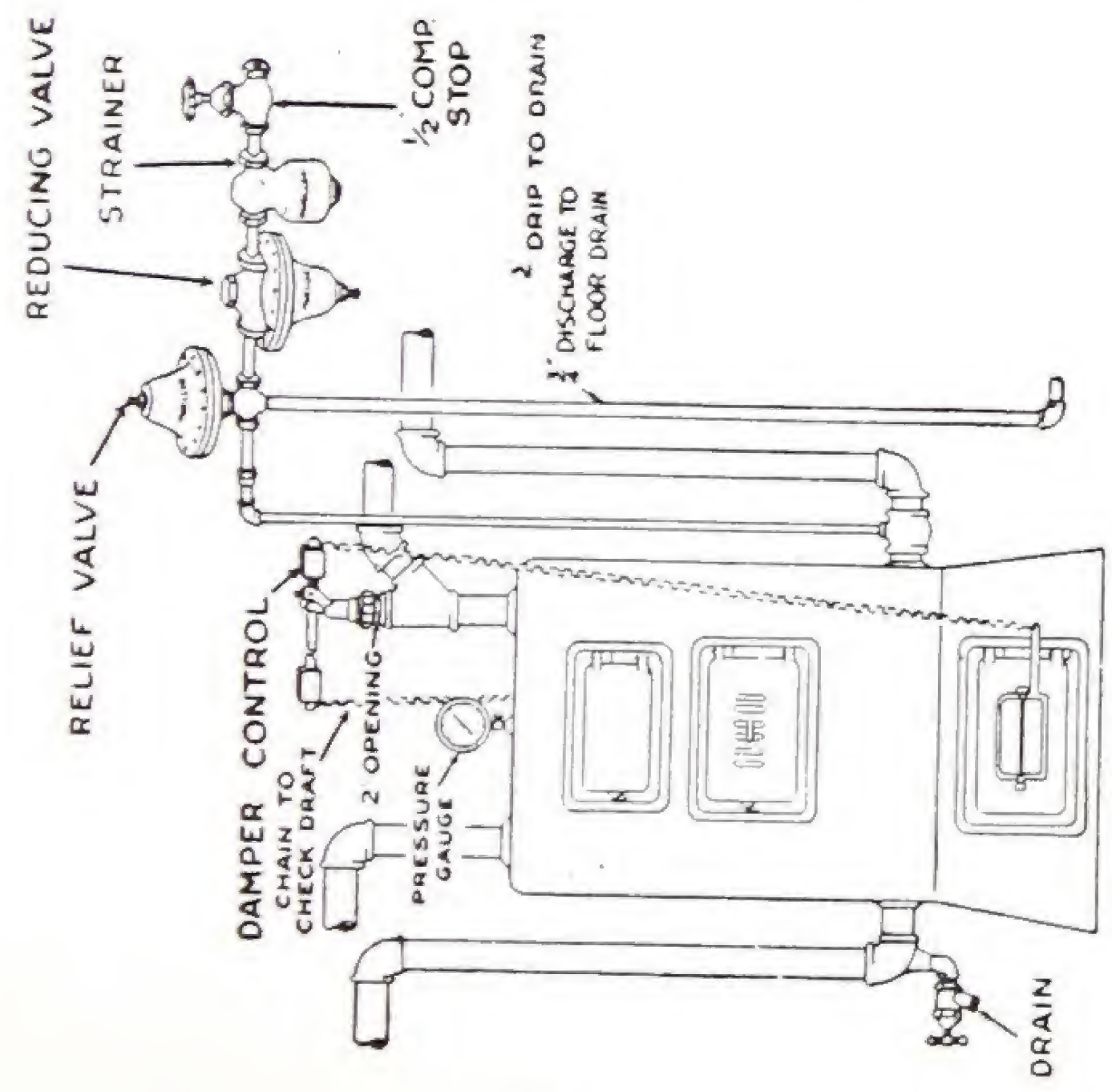
Quantity of mercury necessary for successful operation, style 1, 3½ pounds; style 2, 6½ pounds; style 3, 11 pounds; style 4, 15 pounds.

Approximate weights; style 1, 35 pounds; style 2, 45 pounds; style 3, 55 pounds.

List Prices, each

| | |
|-------------------------------------|---------|
| Style 1 for 1,200 square feet..... | \$25.00 |
| Style 2 for 2,500 square feet..... | 35.00 |
| Style 3 for 3,500 square feet..... | 50.00 |
| Style 4 for 10,000 square feet..... | 65.00 |

Mueller Automatic Hot Water Heat Control



The Mueller Automatic System of Hot Water Heating as furnished by us consists of Comp. Stop Cock, Strainer, Reducing Valve, and Relief Valve all connected up; a Drain Cock, Damper Control, and Pressure Gauge. The outfit complete is shipped in a neat, strong box.

| | |
|---------------------------------------|---------|
| List Price Complete..... | \$50.65 |
| List Price Less Damper Regulator..... | 40.65 |

Automatic Water Feeders

For Low Pressure Steam Boilers

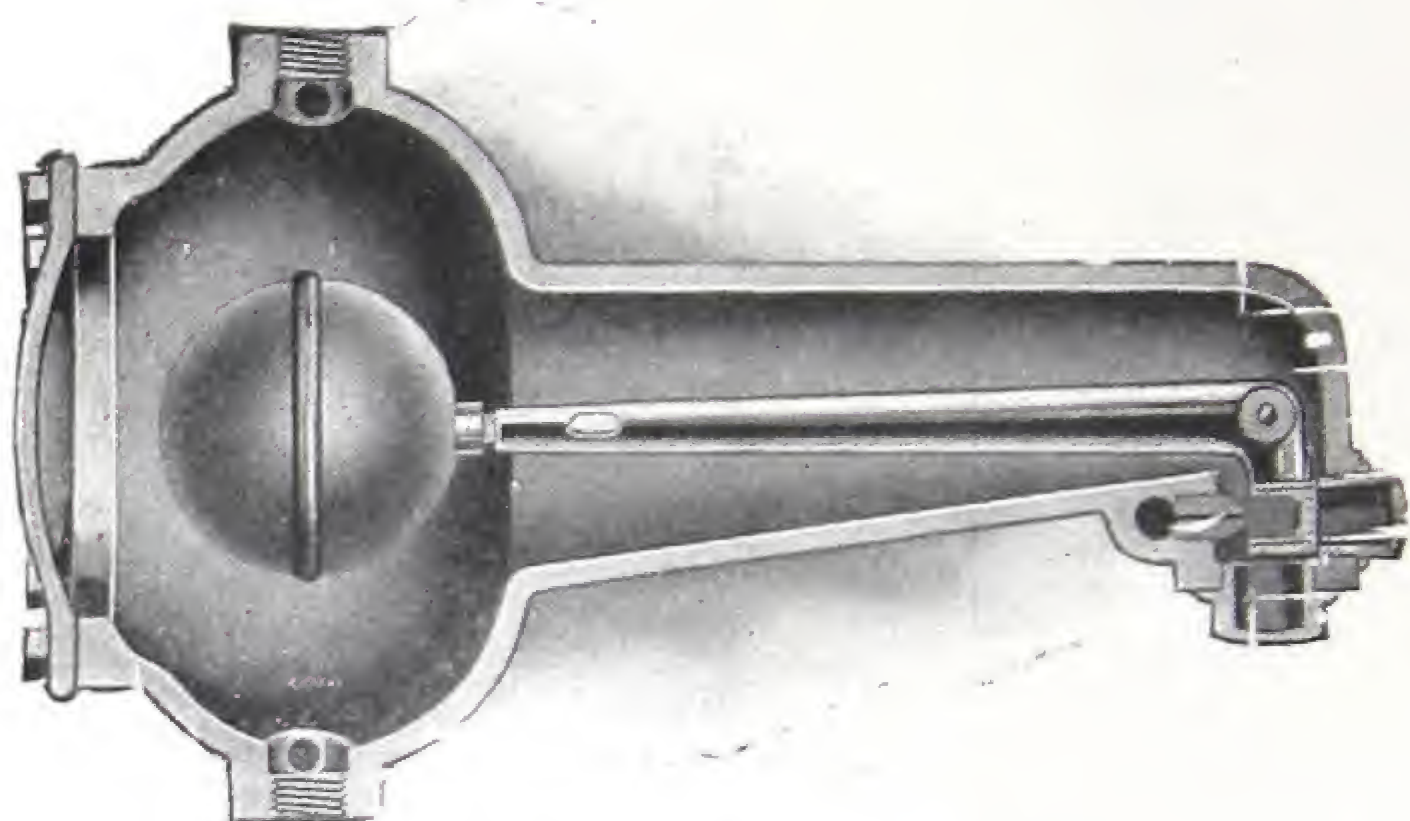


Fig. E 1176 Section

Note: This Feeder is designed for conditions found in Low Pressure Steam installations, where practically all the condensation returns to Boiler by gravity.

The operation of this Feeder is entirely Automatic and dependable. It ensures at all times a proper Water Supply and a permanent Water Level in the Boiler.

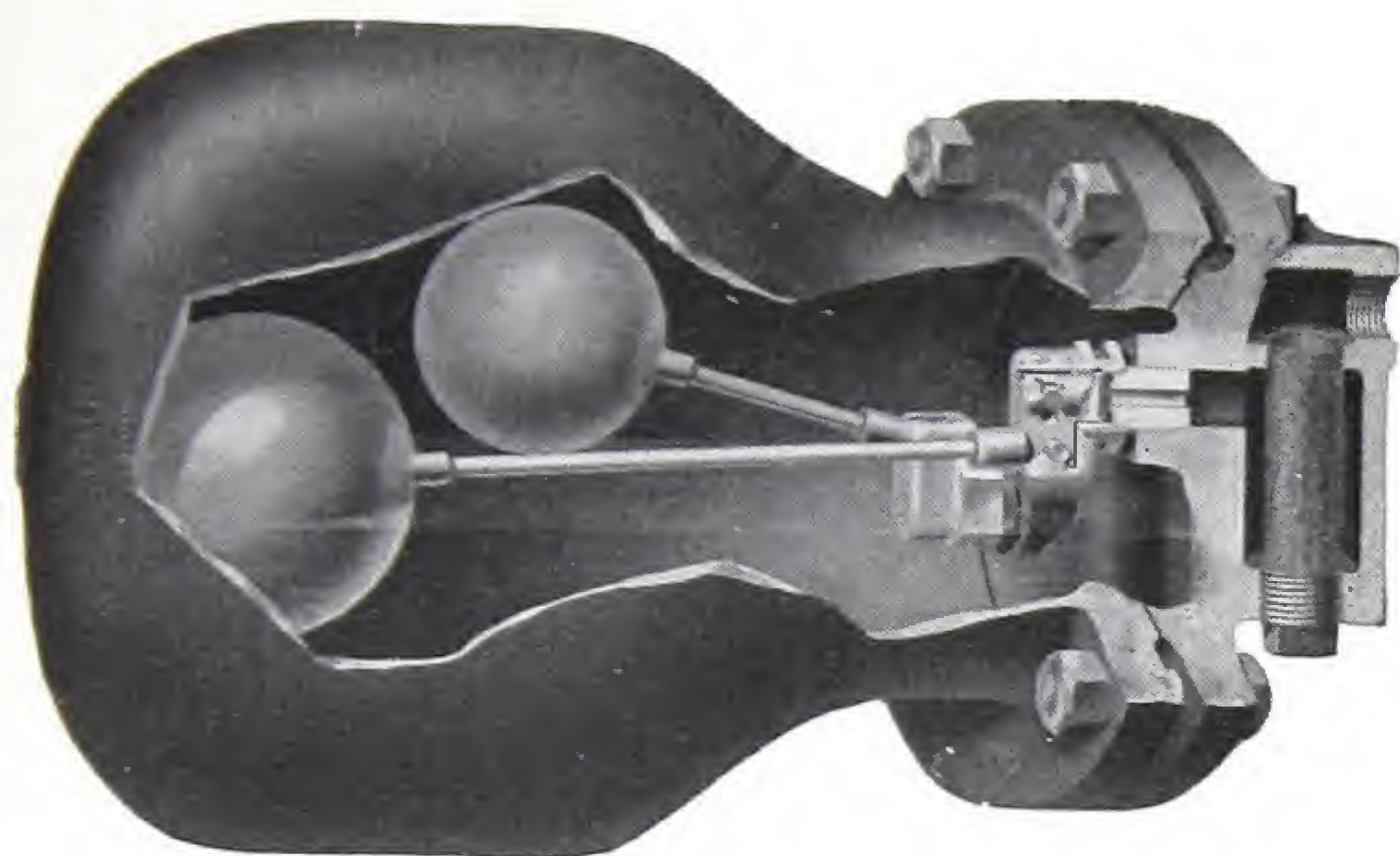
Boiler Connections 1 in. Feed Water Inlet $\frac{1}{2}$ in.
Water Gauge Connections $\frac{1}{2}$ in.

Price without Water Gauge.....\$24.40

Price with Water Gauge..... 30.00

This Feeder is tested to 50 lbs. It is designed for Steam Pressures not exceeding 20 lbs., and Water Pressures not exceeding 40 lbs. To ensure a positive feed, the Water Pressure should exceed the Steam Pressure by at least 10 lbs. In cases where the Water Pressure is higher than this range, a Pressure Regulating Valve should be used.

Duplex Water Feeder



How it Operates

The equalizing connections to the boiler maintain boiler conditions in the Feeder. Any change in the boiler water level produces a similar change in the Feeder and opens or closes the supply valve.

If an excess amount of condensate causes the water level of the boiler to approach flood point, the small float opens the overflow valve and discharges the surplus to the sewer.

The water supply pressure must be, at all times, at least five pounds in excess of the steam pressure. Detailed installation directions are furnished with each Feeder.

Prices on application.

Price List Nickel Plated Valves

| SIZE | 1/2" | 3/4" | 1" | 1 1/4" | 1 1/2" | 2" |
|--|------|------|-----------|--------|--------|-------|
| Fig. E 1204 Globe W. W. Brass Disk | 4.00 | 4.45 | 5.25 | 6.40 | 8.40 | 13.35 |
| Fig. E 1205 Angle W. W. Brass Disk | 4.00 | 4.45 | 5.25 | 6.40 | 8.40 | 13.35 |
| Fig. E 1206 Angle with Union W. W. Brass Disk | 4.30 | 4.90 | 5.85 | 7.15 | 9.40 | 14.85 |
| Fig. E 1207 Q.O. Angle W. W. | 2.95 | 3.25 | 3.90 | 5.00 | 6.30 | 10.50 |
| Fig. E 1208 Q.O. Angle with Union W. W. | 3.25 | 3.70 | 4.50 | 5.75 | 7.30 | 12.00 |
| Fig. E 1209 Angle (with loose key) | 1.65 | 1.95 | 2.65 | 3.70 | 5.00 | 7.75 |
| Fig. E 1209 With Union (with loose key) | 2.40 | 2.85 | 3.65 | 5.05 | 7.10 | 10.85 |
| Fig. E 1209 Extra for Loose Key | | | All Sizes | 0.50 | | |
| Fig. E 1210 Rough Body, Finished Mountn Elbow Gate | | 3.95 | 5.05 | 6.20 | 7.50 | 10.50 |
| Fig. E 1210 Rough Body, Nickel Plated Elbow Gate | | 4.35 | 5.45 | 6.60 | 7.90 | 11.00 |
| Fig. E 1210 Finished and Nickel Plated all over Elbow Gate | | 6.20 | 7.35 | 8.50 | 10.25 | 15.00 |
| Fig. E 1211 Peet Wood Wheel | 2.40 | 3.00 | 3.85 | 5.00 | 6.60 | 9.65 |
| Fig. E 1212 Union Elbow | 1.75 | 2.00 | 2.50 | 3.30 | 4.25 | 7.20 |
| Fig. E 1226 Radiator Angle Jenkins Disk W. W. | 3.40 | 3.85 | 4.50 | 5.65 | 7.40 | 12.10 |
| Fig. E 1227 Radiator Angle with Union Jenkins Disk W. W. | 3.70 | 4.30 | 5.10 | 6.40 | 8.40 | 13.60 |

Price List Brass Valves

| | SIZE | | | | | | | | | |
|---|------|------|-------|-------|-------|--------|--------|-------|--------|-------|
| | 1/4" | 3/8" | 1/2" | 3/4" | 1" | 1 1/4" | 1 1/2" | 2" | 2 1/2" | 3" |
| E1198-99 Globe & Angle Standard Brass Disk..... | .72 | .77 | 1.00 | 1.26 | 1.80 | 2.52 | 3.50 | 5.30 | 10.00 | 14.40 |
| E1223-24 Globe & Angle Jenkins Disk..... | 1.10 | 1.25 | 1.60 | 2.20 | 2.80 | 4.00 | 5.50 | 8.75 | 15.75 | 22.00 |
| E1235 Peet Standard..... | 1.45 | 1.45 | 1.65 | 2.05 | 2.80 | 3.70 | 5.00 | 7.30 | 13.00 | 19.00 |
| E1235 Gate Penberthy..... | 1.45 | 1.45 | 1.65 | 2.05 | 2.80 | 3.70 | 5.00 | 7.30 | 13.00 | 19.00 |
| E1236 Gate Jenkins..... | 1.45 | 1.45 | 1.65 | 2.05 | 2.80 | 3.70 | 5.00 | 7.30 | 13.00 | 19.00 |
| E1218 Swing Check High Grade..... | 1.30 | 1.30 | 1.50 | 1.75 | 2.25 | 3.25 | 4.25 | 6.25 | 12.00 | |
| E1203 Swing Check Standard..... | 1.80 | 1.80 | 2.00 | 2.25 | 2.80 | 3.65 | 4.70 | 6.75 | 15.25 | |
| E1279 Steam Stop Valves..... | .85 | 1.00 | 1.25 | 1.70 | 2.35 | 3.70 | 4.85 | 7.30 | 14.50 | 22.80 |
| E1294 Pop Safety Valves..... | | | | | 6.00 | 6.75 | 10.00 | 12.50 | 30.00 | |
| E1304 Water Pressure Red Valves..... | | | 9.25 | 10.00 | 15.75 | 25.75 | 32.65 | | | |
| E1307 Steam Pressure Red Valves..... | | | 20.00 | 20.00 | 22.00 | 24.00 | 25.00 | 30.00 | 35.00 | 40.00 |
| E1309 Nason L. P. Steam Traps..... | | | 16.00 | 20.00 | 27.50 | 42.50 | 70.00 | | | |

For Fig. illustrations see general catalog E.

Price List Iron Body Brass Mounted Valves

| | SIZE | 2½" | 3" | 3½" | 4" | 4½" | 5" | 6" | 7" | 8" |
|----------|----------------------------------|-------|-------|-------|-------|-------|-------|-------|--------|--------|
| E1242-44 | Globe & Angle Screwed..... | 9.00 | 12.50 | 15.25 | 19.00 | 24.00 | 27.00 | 37.50 | 63.00 | 72.00 |
| E1243-45 | Globe & Angle Flanged..... | 10.75 | 15.00 | 18.50 | 22.50 | 27.50 | 31.00 | 42.00 | 68.00 | 77.00 |
| E1263 | Standard Gate, Screwed..... | 11.50 | 14.00 | 17.00 | 19.00 | 24.00 | 27.50 | 32.50 | 45.00 | 54.00 |
| E1264 | Standard Gate, Flanged..... | 13.50 | 16.50 | 19.50 | 23.00 | 28.00 | 31.50 | 36.50 | 49.00 | 58.00 |
| E1248 | Swing Check, Screwed..... | 12.00 | 13.50 | 17.50 | 20.00 | 26.00 | 30.00 | 36.00 | 55.00 | 70.00 |
| E1249 | Swing check, Flanged..... | 14.50 | 17.00 | 21.00 | 24.00 | 30.00 | 34.00 | 41.00 | 60.00 | 75.00 |
| E1270 | Ball Safety Valves, Screwed..... | 13.25 | 17.25 | 23.00 | 28.75 | 34.50 | 41.50 | 57.75 | 93.50 | 132.00 |
| E1271 | Ball Safety Valves, Flanged..... | 16.00 | 21.50 | 27.50 | 34.00 | 40.00 | 48.00 | 65.00 | 100.00 | 140.00 |
| E1288 | Expansion Joints, Screwed..... | 8.00 | 10.00 | | 18.00 | | 38.00 | 45.00 | | |
| E1286 | Everlasting Valves, Screwed..... | 32.00 | 44.50 | | 70.00 | | | | | |
| E1286 | Everlasting Valves, Flanged..... | 39.00 | 50.00 | | 78.00 | | | | | |

Price List, Floor and Ceiling Plates, Pipe Hangers, Hook Plates, etc.

| | SIZE | | | | | | | | | |
|--|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | 1/2" | 3/4" | 1" | 1 1/4" | 1 1/2" | 2" | 2 1/2" | 3" | 3 1/2" | A" |
| E1331A Saucer N. P. Floor Plates..... | \$.09 | \$.10 | \$.11 | \$.12 | \$.13 | \$.15 | | | | |
| E1331B N. P. Solid Floor Plates No. 15..... | .12 | .13 | .14 | .15 | .16 | .17 | | | | |
| E1331C N. P. Hinged Floor Plates No. 10..... | .27 | .28 | .32 | .35 | .38 | .45 | \$.65 | \$.80 | \$1.00 | \$1.25 |
| E1331C N. P. Hinged Ceiling Plates No. 10..... | .27 | .28 | .32 | .35 | .38 | .45 | .65 | .80 | 1.00 | 1.25 |
| E1534 Universal Plain Ring Hangers..... | .14 | .14 | .16 | .18 | .20 | .22 | .24 | .26 | .30 | .32 |
| E1543 Expansion Cast Ring Hangers..... | .17 | .17 | .18 | .19 | .25 | .29 | .36 | .44 | | .63 |
| E1551 Steel Hook Plates, per hook..... | | | .08 | .11 | .15 | .21 | | | | |
| E1538 Lag Screws..... | .10 | .10 | .10 | .10 | .10 | .12 | .12 | .12 | .14 | .14 |
| E1540 Extension bar 10 ft. lengths..... | | .08 | .09 | 10 | | | | | | |

For Fig. illustrations see general Catalog E.

Standard Cast Iron Fittings

| Sizes | 1/4 | 3/8 | 1/2 | 3/4 | 1 | 1 1/4 | 1 1/2 | 2 | 2 1/2 | 3 | 3 1/2 | 4 | 4 1/2 | 5 | 6 | 7 | 8 | 9 | 10 | 12 |
|------------------------|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Elbows. | \$ c. | \$ c. | \$ c. | \$ c. | \$ c. | \$ c. | \$ c. | \$ c. | \$ c. | \$ c. | \$ c. | \$ c. | \$ c. | \$ c. | \$ c. | \$ c. | \$ c. | \$ c. | \$ c. | \$ c. |
| Elbows, Reducing. | .06 | .06 | .07 | .08 | 10 1/2 | .16 | .20 | .28 | .50 | .75 | 1.05 | 1.20 | 1.75 | 2.00 | 2.75 | 4.70 | 6.75 | 9.00 | 13.50 | 20.00 |
| Elbows, R. and L. | .07 | .07 | .07 | .09 | .12 | .18 | .23 | .32 | .60 | .85 | 1.20 | 1.40 | 2.00 | 2.30 | 3.15 | 5.40 | 7.75 | 10.50 | 15.50 | 23.00 |
| Elbows, 45 degrees. | .07 | .07 | .07 | .09 | .12 | .18 | .23 | .32 | .60 | .85 | 1.20 | 1.40 | 2.00 | 2.30 | 3.15 | 5.40 | 7.75 | 10.50 | 15.50 | 23.00 |
| Long Turn Elbows. | .07 | .07 | .07 | .09 | .12 | .18 | .23 | .32 | .60 | .85 | 1.20 | 1.40 | 2.00 | 2.30 | 3.15 | 5.40 | 7.75 | 10.50 | 15.50 | 23.00 |
| Tee. | .09 | .09 | .10 | .12 | .15 | .23 | .29 | .41 | .73 | 1.10 | 1.50 | 1.75 | 2.55 | 3.00 | 4.00 | 6.80 | 9.75 | 13.00 | 19.50 | 29.00 |
| Tee, Reducing. | .10 | .10 | .10 | .14 | .17 | .27 | .33 | .47 | .83 | 1.25 | 1.75 | 2.00 | 2.95 | 3.50 | 4.60 | 7.80 | 11.25 | 15.00 | 22.50 | 33.50 |
| Crosses. | .18 | .18 | .18 | .20 | .27 | .42 | .53 | .75 | 1.30 | 2.00 | 2.70 | 3.15 | 4.60 | 5.50 | 7.25 | 12.25 | 17.50 | 23.50 | 35.00 | 52.50 |
| Crosses, Reducing. | .18 | .18 | .18 | .20 | .27 | .42 | .53 | .75 | 1.30 | 2.00 | 2.70 | 3.15 | 4.60 | 5.50 | 7.25 | 12.25 | 17.50 | 23.50 | 35.00 | 52.50 |
| Return Bends, Close. | .22 | .22 | .22 | .26 | .30 | .40 | .55 | .80 | 1.35 | 2.20 | 3.00 | 3.50 | 5.00 | 6.00 | 8.00 | 13.50 | 19.25 | 26.00 | 38.50 | 58.00 |
| Return Bends, Open. | .22 | .22 | .22 | .26 | .30 | .40 | .55 | .80 | 1.35 | 2.20 | 3.00 | 3.50 | 5.00 | 6.00 | 8.00 | 13.50 | 19.25 | 26.00 | 38.50 | 58.00 |
| Return Bends, Pitched. | .22 | .22 | .22 | .26 | .30 | .40 | .55 | .80 | 1.35 | 2.20 | 3.00 | 3.50 | 5.00 | 6.00 | 8.00 | 13.50 | 19.25 | 26.00 | 38.50 | 58.00 |
| Reducers. | .02 | .02 | .02 | .03 | .04 | .05 | .07 | .10 | .18 | .25 | .38 | .42 | .65 | .88 | 1.20 | 1.85 | 2.75 | 3.25 | 3.75 | 5.00 |
| Reducers, Eccentric. | .02 | .02 | .02 | .03 | .04 | .05 | .07 | .10 | .18 | .25 | .38 | .42 | .65 | .88 | 1.20 | 1.85 | 2.75 | 3.25 | 3.75 | 5.00 |
| Plugs, R. H. | .02 | .02 | .02 | .03 | .04 | .05 | .07 | .10 | .18 | .25 | .38 | .42 | .65 | .88 | 1.20 | 1.85 | 2.75 | 3.25 | 3.75 | 5.00 |
| Plugs, Left. | .02 | .02 | .02 | .03 | .04 | .05 | .07 | .10 | .18 | .25 | .38 | .42 | .65 | .88 | 1.20 | 1.85 | 2.75 | 3.25 | 3.75 | 5.00 |
| Plugs, Solid. | .02 | .02 | .02 | .03 | .04 | .05 | .07 | .10 | .18 | .25 | .38 | .42 | .65 | .88 | 1.20 | 1.85 | 2.75 | 3.25 | 3.75 | 5.00 |
| Plugs, Countersunk. | .02 | .02 | .02 | .03 | .04 | .05 | .07 | .10 | .18 | .25 | .38 | .42 | .65 | .88 | 1.20 | 1.85 | 2.75 | 3.25 | 3.75 | 5.00 |
| Bushings, R. H. | .04 | .04 | .04 | .05 | .06 | .07 | .09 | .14 | .21 | .30 | .40 | .50 | .75 | .93 | 1.25 | 1.87 | 2.75 | 3.25 | 3.75 | 5.00 |
| Bushings, Left. | .04 | .04 | .04 | .05 | .06 | .07 | .09 | .14 | .21 | .30 | .40 | .50 | .75 | .93 | 1.25 | 1.87 | 2.75 | 3.25 | 3.75 | 5.00 |
| Bushings, Faced. | .04 | .04 | .04 | .05 | .06 | .07 | .09 | .14 | .21 | .30 | .40 | .50 | .75 | .93 | 1.25 | 1.87 | 2.75 | 3.25 | 3.75 | 5.00 |
| Bushings, Eccentric. | .04 | .04 | .04 | .05 | .06 | .07 | .09 | .14 | .21 | .30 | .40 | .50 | .75 | .93 | 1.25 | 1.87 | 2.75 | 3.25 | 3.75 | 5.00 |

Long Sweep Cast Iron Fittings

| SIZES | | 3/4 | 1 | 1 1/4 | 1 1/2 | 2 | 2 1/2 | 3 | 3 1/2 | 4 | 4 1/2 | 5 | 6 | 7 | 8 |
|---|--|-----|-----|-------|-------|------|-------|------|-------|-------|-------|-------|-------|-------|-------|
| No. 1 Elbows..... | | .26 | .32 | .40 | .55 | .80 | 1.20 | 2.25 | 3.25 | 3.50 | 5.50 | 6.50 | 8.75 | 13.00 | 17.00 |
| No. 1 Elbows, Reducing..... | | .40 | .48 | .60 | .83 | 1.20 | 1.80 | 3.38 | 4.88 | 5.25 | 8.25 | 9.75 | 13.13 | 19.50 | 25.50 |
| No. 2 Double Branch Elbows..... | | | .64 | .80 | 1.10 | 1.60 | 2.40 | 4.50 | 6.50 | 7.00 | 11.00 | 13.00 | 17.50 | 26.00 | 34.00 |
| No. 2 Double Branch Elbows, Reducing..... | | | .96 | 1.20 | 1.65 | 2.40 | 3.60 | 6.75 | 9.75 | 10.50 | 16.50 | 19.50 | 26.25 | 39.00 | 51.00 |
| No. 5 Tees..... | | | .64 | .80 | 1.10 | 1.60 | 2.40 | 4.50 | 6.50 | 7.00 | 11.00 | 13.00 | 17.50 | 26.00 | 34.00 |
| No. 5 Tees, Reducing..... | | | .96 | 1.20 | 1.65 | 2.40 | 3.60 | 6.75 | 9.75 | 10.50 | 16.50 | 19.50 | 26.25 | 39.00 | 51.00 |
| No. 3 Tees..... | | | .48 | .60 | .82 | 1.20 | 1.80 | 3.40 | 4.90 | 5.25 | 8.25 | 9.75 | 13.25 | 19.50 | 25.50 |
| No. 3 Tees, Reducing..... | | | .72 | .90 | 1.23 | 1.80 | 2.70 | 5.10 | 7.35 | 7.88 | 12.58 | 14.63 | 19.88 | 20.25 | 38.25 |

Malleable and Cast Iron Unions

| SIZES | 1/4 | 3/8 | 1/2 | 3/4 | 1 | 1 1/4 | 1 1/2 | 2 | 2 1/2 | 3 | 3 1/2 | 4 | 4 1/2 | 5 | 6 | 7 | 8 |
|--|-----|-----|-----|-----|-----|-------|-------|------|-------|------|-------|------|-------|------|------|------|------|
| Unions, Mal..... | .18 | .20 | .22 | .27 | .33 | .46 | .58 | .75 | 1.55 | 2.10 | 3.65 | 4.35 | | | | | |
| Unions, Gal..... | .27 | .30 | .33 | .40 | .50 | .70 | .90 | 1.15 | 2.35 | 3.15 | 5.50 | 6.50 | | | | | |
| Unions, Dart, or Railroad, Black..... | .30 | .40 | .50 | .60 | .80 | 1.20 | 1.60 | 2.00 | 3.20 | 4.80 | | | | | | | |
| Unions, CI, Flange..... | | | .40 | .46 | .52 | .64 | .78 | 1.00 | 1.25 | 1.50 | 1.80 | 2.10 | 2.70 | 3.15 | 3.95 | 5.50 | 7.00 |

Cast Iron Eccentric Reducers

| SIZES | 1 1/4 | 1 1/2 | 2 | 2 1/2 | 3 | 3 1/2 | 4 | 4 1/2 | 5 | 6 | 7 | 8 |
|---------------------------------------|-------|-------|------|-------|------|-------|------|-------|------|------|------|-------|
| Largest size reduced as required..... | .55 | .72 | 1.00 | 1.50 | 2.40 | 3.00 | 4.00 | 5.00 | 6.00 | 8.00 | 9.00 | 11.00 |

Standard Price List

Sectional Pipe Coverings

For Iron Pipe



85% Magnesia Sectional, Asbestos Moulded, 4-Ply
Air Cell, or 1 in. Wool Felt

| Inside Diameter of Pipe | Price per Lin Foot | Elbows | Tees | Crosses | Valves |
|-------------------------------|--------------------------|--------|--------|---------|--------|
| 1½ in. | \$0.22 | \$0.30 | \$0.36 | \$0.48 | \$0.54 |
| ¾ " | .24 | .30 | .36 | .48 | .54 |
| 1 " | .27 | .30 | .36 | .48 | .54 |
| 1¼ " | .30 | .30 | .36 | .48 | .54 |
| 1½ " | .33 | .30 | .36 | .48 | .54 |
| 2 " | .36 | .36 | .42 | .54 | .60 |
| 2½ " | .40 | .42 | .48 | .60 | .78 |
| 3 " | .45 | .48 | .54 | .70 | .96 |
| 3½ " | .50 | .54 | .60 | .80 | 1.20 |
| 4 " | .60 | .60 | .75 | .95 | 1.50 |
| 4½ " | .65 | .72 | .90 | 1.10 | 1.85 |
| 5 " | .70 | .90 | 1.20 | 1.50 | 2.25 |
| 6 " | .80 | 1.30 | 1.60 | 2.00 | 2.80 |
| 7 " | 1.00 | 1.80 | 2.20 | 2.80 | 3.60 |
| 8 " | 1.10 | 2.40 | 3.00 | 3.60 | 4.40 |
| 9 " | 1.20 | 3.00 | 3.80 | 4.40 | 5.30 |
| 10 " | 1.30 | 3.60 | 4.60 | 5.20 | 6.20 |

Expansion Tanks

Complete with Gauge Glass and Mountings

| | | |
|------------------------|-----------------|---------|
| Galvanized and Riveted | 12 x 24—10 Gal. | \$16.80 |
| " | " 12 x 30—15 " | 18.00 |

Automatic with Ball Cock

| | | |
|-------------------------|---------------|---------|
| Plain Oak, Copper Lined | 8 x 17 x 10 | \$10.20 |
| " | " 9 x 20 x 10 | 11.60 |

Thermometers and Gauges

| | |
|--------------------------------------|---------|
| N.P. Hot Water Thermometer, Straight | \$ 2.40 |
| " " " " Angle | 2.60 |
| " " " " 3 1/2"—Round | 15.00 |
| Low Pressure Steam Gauge 5 in. | 5.80 |
| Vacuum Gauge 5 in. | 5.80 |
| Altitude Gauge, Round | 6.20 |

Hair Felt

In Rolls, 6 feet wide, containing 300 sq. ft.

| | Per 100 sq. ft. |
|---------------|--------------------|
| 1/2 in. Thick | \$12.50 |
| 3/4 " " | 16.50 |
| 1 " " | 20.30 |

Radiator Bronze Powders

| | Per oz. | Per lb. |
|---------------|---------|----------|
| Gold | | \$2.00 |
| Copper | | 2.60 |
| Flesh | \$0.20 | |
| Blue | .20 | 2.00 |
| Lemon | .20 | 2.00 |
| Green | | 4.00 |
| Aluminum | .22 | 2.30 |
| | Per tin | Per gal. |
| Bronze Liquid | \$1.10 | \$3.00 |

Never Leak in Tins

| | Per tin |
|--------------|---------|
| 1 Quart Tins | \$ 5.60 |
| 2 " " | 10.00 |

Wrought Iron Nipples

Black Iron—Right Hand

| Length in Inches | | | | Prices | | Prices of Extra Long Nipples | | | | | | | | | | |
|------------------|----------------|----------------|----------------|----------------|----------------|------------------------------|------------|-------------------|-----------|------------|------------|-------------|-------------|-------------|-------------|-------------|
| Close | Short | Long | | | Size, Inches | Close or Short | Long | Lengths in Inches | | | | | | | | |
| | | | | | | | | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| $\frac{3}{4}$ | $4\frac{1}{2}$ | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | $\frac{1}{8}$ | \$ c. .04 | \$ c. .06 | \$ c. .07 | \$ c. .08 | \$ c. .10 | \$ c. .12 | \$ c. .14 | \$ c. .15 | \$ c. .17 | \$ c. .18 | \$ c. .19 |
| $\frac{7}{8}$ | $1\frac{1}{2}$ | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | $\frac{1}{4}$ | \$ c. .04 | \$ c. .06 | \$ c. .07 | \$ c. .08 | \$ c. .10 | \$ c. .12 | \$ c. .14 | \$ c. .15 | \$ c. .17 | \$ c. .18 | \$ c. .19 |
| 1 | $1\frac{1}{2}$ | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | $\frac{3}{8}$ | \$ c. .04 | \$ c. .06 | \$ c. .07 | \$ c. .08 | \$ c. .10 | \$ c. .12 | \$ c. .14 | \$ c. .15 | \$ c. .17 | \$ c. .18 | \$ c. .19 |
| $1\frac{1}{8}$ | $1\frac{1}{2}$ | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | $\frac{1}{2}$ | \$ c. .05 | \$ c. .07 | \$ c. .08 | \$ c. .10 | \$ c. .12 | \$ c. .14 | \$ c. .16 | \$ c. .18 | \$ c. .20 | \$ c. .22 | \$ c. .23 |
| $1\frac{3}{8}$ | 2 | $2\frac{1}{2}$ | $3\frac{1}{2}$ | 4 | $\frac{3}{4}$ | \$ c. .06 | \$ c. .09 | ... | \$ c. .11 | \$ c. .13 | \$ c. .17 | \$ c. .18 | \$ c. .20 | \$ c. .22 | \$ c. .24 | \$ c. .26 |
| $1\frac{1}{2}$ | $2\frac{1}{2}$ | $2\frac{1}{2}$ | $3\frac{1}{2}$ | 4 | 1 | \$ c. .08 | \$ c. .13 | ... | \$ c. .15 | \$ c. .18 | \$ c. .23 | \$ c. .25 | \$ c. .28 | \$ c. .31 | \$ c. .34 | \$ c. .36 |
| $1\frac{5}{8}$ | $2\frac{1}{2}$ | $3\frac{1}{2}$ | 4 | $4\frac{1}{2}$ | $1\frac{1}{4}$ | \$ c. .11 | \$ c. .17 | ... | \$ c. .20 | \$ c. .24 | \$ c. .29 | \$ c. .33 | \$ c. .36 | \$ c. .40 | \$ c. .44 | \$ c. .47 |
| $1\frac{3}{4}$ | $2\frac{1}{2}$ | $3\frac{1}{2}$ | 4 | $4\frac{1}{2}$ | $1\frac{1}{2}$ | \$ c. .13 | \$ c. .20 | ... | \$ c. .25 | \$ c. .29 | \$ c. .36 | \$ c. .40 | \$ c. .45 | \$ c. .50 | \$ c. .54 | \$ c. .59 |
| 2 | $2\frac{1}{2}$ | $3\frac{1}{2}$ | 4 | $4\frac{1}{2}$ | 2 | \$ c. .18 | \$ c. .27 | ... | \$ c. .32 | \$ c. .38 | \$ c. .50 | \$ c. .54 | \$ c. .59 | \$ c. .65 | \$ c. .72 | \$ c. .77 |
| $2\frac{1}{2}$ | $3\frac{1}{2}$ | 4 | $4\frac{1}{2}$ | 5 | $2\frac{1}{2}$ | \$ c. .39 | \$ c. .59 | ... | ... | \$ c. .68 | \$ c. .90 | \$ c. .97 | \$ c. 1.06 | \$ c. 1.17 | \$ c. 1.26 | \$ c. 1.35 |
| $2\frac{1}{2}$ | 3 | $4\frac{1}{2}$ | $5\frac{1}{2}$ | 6 | 3 | \$ c. .48 | \$ c. .72 | ... | ... | \$ c. .85 | \$ c. 1.08 | \$ c. 1.20 | \$ c. 1.33 | \$ c. 1.45 | \$ c. 1.58 | \$ c. 1.70 |
| $2\frac{3}{4}$ | 4 | 5 | 6 | 7 | $3\frac{1}{2}$ | \$ c. .75 | \$ c. 1.05 | ... | ... | ... | \$ c. 1.30 | \$ c. 1.45 | \$ c. 1.60 | \$ c. 1.75 | \$ c. 1.90 | \$ c. 2.05 |
| 3 | 4 | 5 | 6 | 8 | 4 | \$ c. .85 | \$ c. 1.20 | ... | ... | ... | \$ c. 1.52 | \$ c. 1.69 | \$ c. 1.87 | \$ c. 2.05 | \$ c. 2.22 | \$ c. 2.40 |
| 3 | $4\frac{1}{2}$ | 5 | $5\frac{1}{2}$ | 10 | $4\frac{1}{2}$ | \$ c. 1.25 | \$ c. 1.70 | ... | ... | ... | \$ c. 2.25 | \$ c. 2.50 | \$ c. 2.75 | \$ c. 2.95 | \$ c. 3.17 | \$ c. 3.40 |
| $3\frac{1}{4}$ | $4\frac{1}{2}$ | 5 | 6 | 12 | 5 | \$ c. 1.55 | \$ c. 2.45 | ... | ... | ... | \$ c. 2.58 | \$ c. 2.83 | \$ c. 3.10 | \$ c. 3.35 | \$ c. 3.60 | \$ c. 3.85 |
| $3\frac{1}{4}$ | $4\frac{1}{2}$ | 5 | $6\frac{1}{2}$ | ... | 6 | \$ c. 1.85 | \$ c. 2.90 | ... | ... | ... | \$ c. 3.05 | \$ c. 3.35 | \$ c. 3.70 | \$ c. 4.00 | \$ c. 4.30 | \$ c. 4.55 |
| $3\frac{1}{2}$ | 5 | ... | ... | ... | 7 | \$ c. 3.20 | ... | ... | ... | \$ c. 3.60 | \$ c. 4.05 | \$ c. 4.45 | \$ c. 4.90 | \$ c. 5.30 | \$ c. 5.75 | \$ c. 6.15 |
| $3\frac{1}{2}$ | 5 | ... | ... | ... | 8 | \$ c. 3.55 | ... | ... | ... | \$ c. 4.05 | \$ c. 4.55 | \$ c. 5.05 | \$ c. 5.50 | \$ c. 6.00 | \$ c. 6.50 | \$ c. 7.00 |
| 4 | 5 | ... | ... | ... | 9 | \$ c. 5.25 | ... | ... | ... | ... | ... | \$ c. 6.50 | \$ c. 7.10 | \$ c. 7.75 | \$ c. 8.40 | \$ c. 9.00 |
| 4 | 5 | ... | ... | ... | 10 | \$ c. 6.75 | ... | ... | ... | ... | ... | \$ c. 8.25 | \$ c. 8.90 | \$ c. 9.70 | \$ c. 10.40 | \$ c. 11.15 |
| 4 | 5 | ... | ... | ... | 12 | \$ c. 8.00 | ... | ... | ... | ... | ... | \$ c. 10.00 | \$ c. 10.80 | \$ c. 11.75 | \$ c. 12.70 | \$ c. 13.65 |

Wrought Iron Nipples

Black Iron—Right and Left

| Length in Inches | | | | Size, Inches | Prices | | Prices of Extra Long Nipples | | | | | | | | | | | | | | | |
|------------------|----------------|----------------|----------------|----------------|-----------------|--------|------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--|--|--|--|--|--|
| Close | Short | Long | | | Closes or Short | Long | Lengths in Inches | | | | | | | | | | | | | | | |
| $\frac{3}{4}$ | $1\frac{1}{2}$ | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | $\frac{1}{8}$ | \$.08 | \$.05 | \$.09 | \$.11 | \$.13 | \$.16 | \$.18 | \$.20 | \$.23 | \$.25 | \$.27 | | | | | | |
| $\frac{7}{8}$ | $1\frac{1}{2}$ | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | $\frac{1}{4}$ | .08 | .05 | .09 | .11 | .13 | .16 | .18 | .20 | .23 | .25 | .27 | | | | | | |
| 1 | $1\frac{1}{2}$ | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | $\frac{3}{8}$ | .08 | .05 | .09 | .11 | .13 | .16 | .18 | .20 | .23 | .25 | .27 | | | | | | |
| $1\frac{1}{8}$ | $1\frac{1}{2}$ | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | $\frac{1}{2}$ | .10 | .07 | .11 | .13 | .16 | .18 | .21 | .24 | .27 | .29 | .31 | | | | | | |
| $1\frac{3}{8}$ | 2 | $2\frac{1}{2}$ | $3\frac{1}{2}$ | 4 | $\frac{3}{4}$ | .12 | .08 | . | .15 | .17 | .23 | .25 | .27 | .29 | .32 | .35 | | | | | | |
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Hexagon R and L Nipples. List, $\frac{3}{4}$ in., 25c.; 1 in., 30c.; $1\frac{1}{4}$ in., 40c.; $1\frac{1}{2}$ in., 50c.; 2 in., 70c.

Dimensions of Standard Wrought Iron Pipe

We do not handle or quote prices on Pipe

| Nominal Inside Diam. Inches | Actual Diam. Inches | | Thickness Inches | Circumference Inches | | Area Square Inches | |
|-----------------------------|---------------------|---------|------------------|----------------------|----------|--------------------|----------|
| | Inside | Outside | | Internal | External | Internal | External |
| $\frac{1}{8}$ | .27 | .4 | .07 | .84 | 1.27 | .06 | .13 |
| $\frac{1}{4}$ | .36 | .54 | .09 | 1.14 | 1.70 | .1 | .23 |
| $\frac{3}{8}$ | .49 | .67 | .09 | 1.55 | 2.12 | .19 | .36 |
| $\frac{1}{2}$ | .62 | .84 | .11 | 1.95 | 2.63 | .3 | .55 |
| $\frac{3}{4}$ | .82 | 1.05 | .11 | 2.59 | 3.30 | .53 | .87 |
| 1 | 1.05 | 1.31 | .13 | 3.29 | 4.13 | .86 | 1.36 |
| $1\frac{1}{4}$ | 1.38 | 1.66 | .14 | 4.33 | 5.21 | 1.5 | 2.16 |
| $1\frac{1}{2}$ | 1.61 | 1.9 | .14 | 5.06 | 5.97 | 2.04 | 2.83 |
| 2 | 2.07 | 2.37 | .15 | 6.49 | 7.46 | 3.36 | 4.43 |
| $2\frac{1}{2}$ | 2.47 | 2.87 | .20 | 7.75 | 9.03 | 4.78 | 6.49 |
| 3 | 3.07 | 3.5 | .22 | 9.63 | 11. | 7.39 | 9.62 |
| $3\frac{1}{2}$ | 3.55 | 4. | .23 | 11.15 | 12.57 | 9.89 | 12.57 |
| 4 | 4.03 | 4.5 | .24 | 12.65 | 14.14 | 12.73 | 15.9 |
| $4\frac{1}{2}$ | 4.51 | 5. | .25 | 14.16 | 15.71 | 15.96 | 19.63 |
| 5 | 5.04 | 5.56 | .26 | 15.85 | 17.48 | 19.99 | 24.31 |
| 6 | 6.06 | 6.62 | .28 | 19.05 | 20.81 | 28.89 | 34.47 |
| 7 | 7.02 | 7.62 | .30 | 22.06 | 23.95 | 38.74 | 45.66 |
| 8 | 7.98 | 8.62 | .32 | 25.07 | 27.1 | 50.02 | 58.43 |
| 9 | 8.94 | 9.62 | .34 | 28.08 | 30.24 | 62.72 | 72.76 |
| 10 | 10.02 | 10.75 | .37 | 31.47 | 33.77 | 78.82 | 90.76 |
| 11 | 11 | 11.75 | .37 | 34.56 | 36.91 | 95.03 | 108.43 |
| 12 | 12. | 12.75 | .37 | 37.7 | 40.05 | 113.1 | 127.68 |

Capacities and Threads of Standard W. I. Pipe

| Nominal Inside Diam. Inches | Length to Thread Inches | Length of Pipe Containing one gal. Feet | Contained Pounds of Water per Lineal Foot | Nominal Inside Diam. Inches | Length to Thread Inches | Length of Pipe Containing one gal. Feet | Contained Pounds of Water per Lineal Foot |
|-----------------------------|-------------------------|---|---|-----------------------------|-------------------------|---|---|
| $\frac{1}{8}$ | $\frac{9}{32}$ | 336.6 | .024 | $3\frac{1}{2}$ | $1\frac{1}{16}$ | 1.95 | 4.285 |
| $\frac{1}{4}$ | $\frac{3}{8}$ | 148.8 | .044 | 4 | $1\frac{1}{8}$ | 1.51 | 5.517 |
| $\frac{3}{8}$ | $\frac{1}{16}$ | 100.8 | .082 | $4\frac{1}{2}$ | $1\frac{1}{4}$ | 1.2 | 6.908 |
| $\frac{1}{2}$ | $\frac{1}{2}$ | 63.2 | .132 | 5 | $1\frac{1}{4}$ | .96 | 8.668 |
| $\frac{3}{4}$ | $\frac{9}{16}$ | 36.1 | .23 | 6 | $1\frac{3}{8}$ | .66 | 12.521 |
| 1 | $\frac{5}{8}$ | 22.3 | .373 | 7 | $1\frac{1}{2}$ | .49 | 16.79 |
| $1\frac{1}{4}$ | $\frac{11}{16}$ | 12.8 | .648 | 8 | $1\frac{5}{8}$ | .38 | 21.688 |
| $1\frac{1}{2}$ | $\frac{13}{16}$ | 9.4 | .883 | 9 | $1\frac{5}{8}$ | .3 | 27.58 |
| 2 | $1\frac{1}{8}$ | 5.7 | 1.454 | 10 | $1\frac{3}{4}$ | .24 | 34.171 |
| $2\frac{1}{2}$ | 1 | 4.02 | 2.072 | 11 | | .2 | 41.189 |
| 3 | 1 | 2.6 | 3.202 | 12 | | .17 | 49.017 |

NOTE.—Above information is quoted from standard authorities. Not guaranteed.

Square Feet of Radiating Surface of Pipe per Lineal Foot

| Length of Pipe | SIZE OF PIPE | | | | | | | | | |
|-------------------|---------------|------|----------------|----------------|------|----------------|------|-------|-------|-------|
| | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 | 4 | 5 | 6 |
| 1 | .275 | .346 | .434 | .494 | .622 | .753 | .916 | 1.175 | 1.455 | 1.739 |
| 10 | 2.7 | 3.5 | 4.3 | 4.9 | 6.2 | 7.5 | 9.1 | 11.8 | 14.6 | 17.4 |
| 11 | 3. | 3.8 | 4.8 | 5.4 | 6.8 | 8.3 | 10. | 12.9 | 16. | 19.1 |
| 12 | 3.3 | 4.1 | 5.2 | 5.9 | 7.5 | 9. | 11. | 14.1 | 17.4 | 20.9 |
| 13 | 3.6 | 4.5 | 5.6 | 6.4 | 8.1 | 9.8 | 11.9 | 15.3 | 18.9 | 22.6 |
| 14 | 3.8 | 4.8 | 6.1 | 6.9 | 8.7 | 10.5 | 12.8 | 16.5 | 20.3 | 24.3 |
| 15 | 4.1 | 5.2 | 6.5 | 7.4 | 9.3 | 11.3 | 13.7 | 17.6 | 21.8 | 26.1 |
| 16 | 4.4 | 5.5 | 6.9 | 7.9 | 10. | 12. | 14.6 | 18.8 | 23.2 | 27.8 |
| 17 | 4.7 | 5.9 | 7.4 | 8.4 | 10.6 | 12.8 | 15.5 | 20. | 24.7 | 29.5 |
| 18 | 5. | 6.2 | 7.8 | 8.9 | 11.2 | 13.5 | 16.5 | 21.2 | 26.2 | 31.3 |
| 19 | 5.2 | 6.6 | 8.3 | 9.4 | 11.8 | 14.3 | 17.4 | 22.3 | 27.6 | 33.1 |
| 20 | 5.5 | 6.9 | 8.7 | 9.9 | 12.5 | 15. | 18.3 | 23.5 | 29.1 | 34.8 |
| 21 | 5.8 | 7.3 | 9.1 | 10.4 | 13. | 15.8 | 19.2 | 24.7 | 30.5 | 36.5 |
| 22 | 6. | 7.6 | 9.6 | 10.9 | 13.7 | 16.5 | 20.2 | 25.9 | 32. | 38.3 |
| 23 | 6.3 | 8. | 10. | 11.3 | 14.3 | 17.3 | 21.1 | 27. | 33.5 | 40. |
| 24 | 6.6 | 8.3 | 10.4 | 11.9 | 14.9 | 18. | 22. | 28.2 | 34.9 | 41.7 |
| 25 | 6.9 | 8.6 | 10.9 | 12.3 | 15.6 | 18.8 | 22.9 | 29.3 | 36.3 | 43.5 |
| 26 | 7.1 | 9. | 11.3 | 12.8 | 16.2 | 19.5 | 23.8 | 30.5 | 37.8 | 45.2 |
| 27 | 7.4 | 9.4 | 11.7 | 13.3 | 16.8 | 20.3 | 24.7 | 31.7 | 39.3 | 47. |
| 28 | 7.7 | 9.7 | 12.2 | 13.8 | 17.4 | 21. | 25.6 | 32.9 | 40.7 | 48.7 |
| 29 | 8. | 10. | 12.6 | 14.3 | 18. | 21.8 | 26.6 | 34.1 | 42.2 | 50.4 |
| 30 | 8.3 | 10.4 | 13. | 14.8 | 18.7 | 22.5 | 27.5 | 35.3 | 43.6 | 52.1 |
| 31 | 8.5 | 10.7 | 13.5 | 15.3 | 19.3 | 23.3 | 28.4 | 36.4 | 45.1 | 53.9 |
| 32 | 8.8 | 11.1 | 13.9 | 15.8 | 19.9 | 24.1 | 29.3 | 37.6 | 46.5 | 55.6 |
| 33 | 9.1 | 11.4 | 14.3 | 16.3 | 20.5 | 24.8 | 30.2 | 38.8 | 48. | 57.4 |
| 34 | 9.4 | 11.7 | 14.7 | 16.8 | 21.2 | 25.6 | 31.1 | 40. | 49.5 | 59.1 |
| 35 | 9.6 | 12.1 | 15.2 | 17.3 | 21.8 | 26.3 | 32. | 41.1 | 50.9 | 60.8 |
| 36 | 9.9 | 12.5 | 15.6 | 17.8 | 22.4 | 27. | 33. | 42.3 | 52.4 | 62.6 |
| 37 | 10.2 | 12.8 | 16.1 | 18.3 | 23. | 27.8 | 33.9 | 43.5 | 53.8 | 64.3 |
| 38 | 10.5 | 13.2 | 16.5 | 18.8 | 23.7 | 28.5 | 34.8 | 44.6 | 55.2 | 66. |
| 39 | 10.7 | 13.5 | 16.9 | 19.3 | 24.3 | 29.3 | 35.7 | 45.8 | 56.7 | 67.8 |
| 40 | 11. | 13.8 | 17.4 | 19.8 | 24.9 | 30.1 | 36.6 | 47. | 58.2 | 69.5 |
| 41 | 11.3 | 14.2 | 17.8 | 20.3 | 25.5 | 30.8 | 37.6 | 48.2 | 59.6 | 71.3 |
| 42 | 11.5 | 14.5 | 18.2 | 20.8 | 26.1 | 31.6 | 38.5 | 49.4 | 61.1 | 73. |
| 43 | 11.8 | 14.9 | 18.7 | 21.3 | 26.8 | 32.2 | 39.4 | 50.6 | 62.5 | 74.8 |
| 44 | 12.1 | 15.2 | 19.1 | 21.8 | 27.4 | 33.1 | 40.3 | 51.7 | 64. | 76.5 |
| 45 | 12.4 | 15.6 | 19.5 | 22.2 | 28. | 33.8 | 41.2 | 52.9 | 65.5 | 78.2 |
| 46 | 12.7 | 15.9 | 20. | 22.7 | 28.6 | 34.6 | 42.2 | 54. | 67. | 80. |
| 47 | 12.9 | 16.3 | 20.4 | 23.2 | 29.2 | 35.3 | 43. | 55.2 | 68.4 | 81.7 |
| 48 | 13.2 | 16.6 | 20.8 | 23.7 | 29.9 | 36.1 | 43.9 | 56.4 | 69.8 | 83.5 |
| 49 | 13.5 | 17. | 21.3 | 24.2 | 30.5 | 36.8 | 44.8 | 57.6 | 71.2 | 85.1 |
| 50 | 13.8 | 17.3 | 21.7 | 24.7 | 31.1 | 37.6 | 45.8 | 58.7 | 72.7 | 87. |

Above figures are taken from a standard authority,
but not guaranteed.

Useful Information Concerning Greenhouse Heating

While Greenhouses may be satisfactorily heated with Steam, Hot Water is generally preferred because of its ability to store large quantities of heat, and in case the fires are neglected or go out, this stored heat is given off gradually, and by preventing a sudden fall in temperature protects the plants from injury.

Table of Amounts of Radiating Surface Necessary to Heat a Given Amount of Glass Exposure to Various Temperatures in Zero Weather.

| Square Feet of Glass Exposure | STEAM | | | | |
|-------------------------------------|---|-------|-------|-------|------|
| | No. of Square Feet of Radiation Required at | | | | |
| | 40° | 45° | 50° | 60° | 70° |
| 25 | 2 7-9 | 3 1-8 | 3 4-7 | 4 1-6 | 5 |
| 50 | 5 5-9 | 6 1-4 | 7 1-7 | 8 1-3 | 10 |
| 75 | 8 | 9 | 10 | 13 | 15 |
| 100 | 11 | 13 | 14 | 17 | 20 |
| 200 | 23 | 25 | 30 | 33 | 40 |
| 300 | 34 | 38 | 43 | 50 | 60 |
| 400 | 45 | 50 | 57 | 67 | 80 |
| 500 | 56 | 63 | 72 | 83 | 100 |
| 1000 | 112 | 125 | 143 | 167 | 200 |
| 2000 | 223 | 250 | 286 | 333 | 400 |
| 3000 | 334 | 375 | 429 | 500 | 600 |
| 4000 | 445 | 500 | 571 | 667 | 800 |
| 5000 | 556 | 625 | 714 | 833 | 1000 |
| 10000 | 1112 | 1250 | 1429 | 1667 | 2000 |
| 20000 | 2223 | 2500 | 2857 | 3333 | 4000 |

| Square Feet Of Glass Exposure | HOT WATER | | | | |
|-------------------------------------|---|------|-------|-------|-------|
| | No. of Square Feet of Radiation Required at | | | | |
| | 40° | 45° | 50° | 60° | 70° |
| 25 | 4 1-6 | 5 | 6 1-4 | 7 1-7 | 8 1-3 |
| 50 | 8 | 10 | 13 | 14 | 16 |
| 75 | 13 | 15 | 19 | 21 | 25 |
| 100 | 17 | 20 | 25 | 29 | 33 |
| 200 | 33 | 40 | 50 | 57 | 67 |
| 300 | 50 | 60 | 75 | 86 | 100 |
| 400 | 67 | 80 | 100 | 114 | 133 |
| 500 | 83 | 100 | 125 | 143 | 167 |
| 1000 | 167 | 200 | 250 | 286 | 333 |
| 2000 | 333 | 400 | 500 | 572 | 667 |
| 3000 | 500 | 600 | 750 | 857 | 1000 |
| 4000 | 667 | 800 | 1000 | 1143 | 1333 |
| 5000 | 833 | 1000 | 1250 | 1429 | 1667 |
| 10000 | 1667 | 2000 | 2500 | 2857 | 3333 |
| 20000 | 3333 | 4000 | 5000 | 5714 | 6667 |

For poorly constructed houses add 10 per cent. to the above amounts.

Do not use Asphalt or Tar Paints in a Greenhouse. They will injure the plants. Paint pipes with lampblack and boiled oil thinned with turpentine.

A most important part of a greenhouse is its chimney. This should be of brick or tile and of ample size, and should never be less than twenty-five feet high.

To provide for temperature 10° below zero add 10%.

To provide for temperature 20° below zero add 25%.

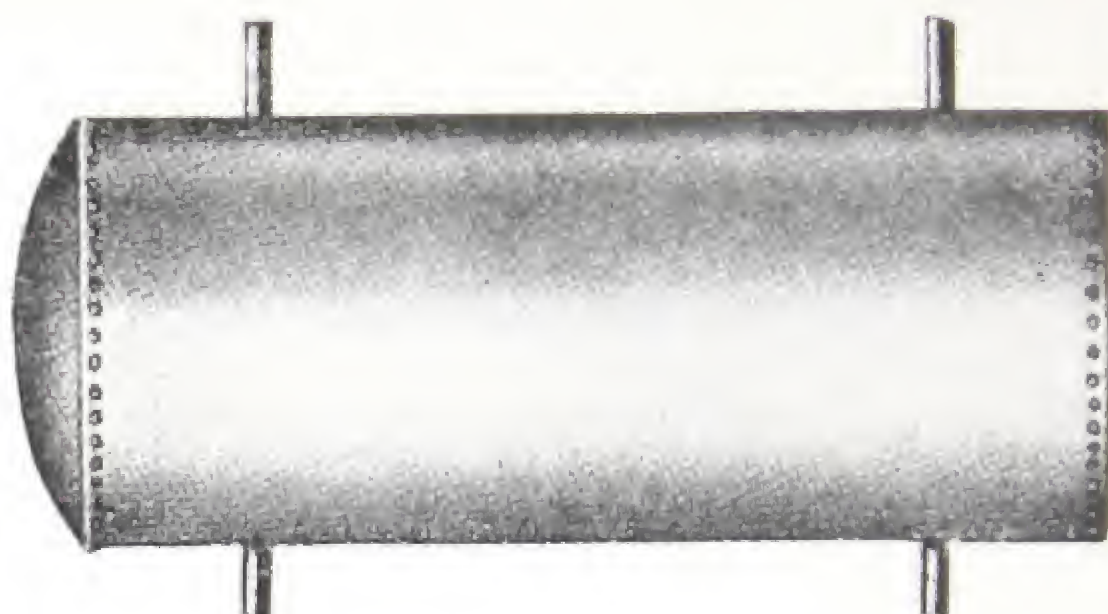
Table of Sizes and Horse Power of Tubular Boilers

Return Tubular Boilers for Low Pressure Steam Heating

| H.P. | Sq. Ft. | Shell | | Tubes | | Thickness | | Grates | | S.V. | Pipes | Brick Required | | Weight, Full Front Fixtures, etc. Complete |
|------|---------|------------------|----------------|--------|----------|-----------|-------|--------|-------|--------|-------|----------------|-----------------|---|
| | | Diam. Inches. | Length Feet | Number | Diameter | Length | Shell | Heads | Width | Length | | Fire Brick | Common Brick | |
| 12 | 177 | 30 | 7 | 30 | 2 1/2 | 7 | 1/4 | 3/8 | 30 | 24 | 1 1/4 | 550 | 4600 | 3310 |
| 14 | 202 | 30 | 8 | 30 | 2 1/2 | 8 | 1/4 | 3/8 | 30 | 30 | 1 1/4 | 650 | 5000 | 3700 |
| 16 | 254 | 36 | 8 | 38 | 2 1/2 | 8 | 1/4 | 3/8 | 36 | 30 | 1 1/4 | 700 | 5300 | 4550 |
| 20 | 287 | 36 | 10 | 28 | 3 | 10 | 1/4 | 3/8 | 36 | 36 | 1 1/4 | 750 | 5500 | 5013 |
| 25 | 376 | 42 | 10 | 38 | 3 | 10 | 1/4 | 3/8 | 42 | 36 | 1 1/4 | 750 | 6700 | 6750 |
| 35 | 451 | 42 | 12 | 38 | 3 | 12 | 1/4 | 3/8 | 42 | 42 | 1 1/4 | 850 | 7600 | 7100 |
| 40 | 596 | 48 | 12 | 52 | 3 | 12 | 1/4 | 7/16 | 48 | 48 | 1 1/2 | 1100 | 10900 | 8300 |
| 45 | 695 | 48 | 14 | 52 | 3 | 14 | 1/4 | 7/16 | 48 | 54 | 1 1/2 | 1150 | 11800 | 9200 |
| 50 | 722 | 54 | 12 | 64 | 3 | 12 | 5/16 | 7/16 | 54 | 48 | 1 1/2 | 1250 | 12900 | 10800 |
| 60 | 844 | 54 | 14 | 64 | 3 | 14 | 5/16 | 7/16 | 54 | 54 | 1 1/2 | 1400 | 13800 | 11800 |
| 70 | 1035 | 60 | 14 | 80 | 3 | 14 | 11/32 | 7/16 | 60 | 60 | 1 1/2 | 1550 | 16700 | 14200 |
| 80 | 1085 | 60 | 16 | 62 | 3 1/2 | 16 | 11/32 | 7/16 | 60 | 60 | 1 1/2 | 1600 | 18300 | 15400 |

One square foot of boiler heating surface will supply from 5 1/2 to 9 square feet of Radiation (direct). Each H.P. of a tubular boiler will supply 80 to 100 square feet of Cast Iron Radiation, or 240 to 300 feet of inch pipe.

Sirdar Storage Tanks



Dimensions and List Prices

| Diam. Inches | Length, Feet | Cap., Gals. | Regular Openings, Inches | List Price | |
|-----------------|-----------------|----------------|--------------------------------|------------|----------|
| | | | | Black | Galvd. |
| 24 | 4 | 100 | 1½ | \$ 50.00 | \$ 73.00 |
| 24 | 5 | 120 | 1½ | 53.00 | 80.00 |
| 24 | 6 | 140 | 1½ | 55.00 | 84.00 |
| 30 | 4 | 145 | 2 | 60.00 | 90.00 |
| 30 | 5 | 180 | 2 | 65.00 | 98.00 |
| 30 | 6 | 220 | 2 | 70.00 | 106.00 |
| 30 | 7 | 250 | 2 | 80.00 | 114.00 |
| 30 | 8 | 295 | 2 | 90.00 | 122.00 |
| 36 | 6 | 315 | 2 | 96.00 | 146.00 |
| 36 | 7 | 365 | 2 | 110.00 | 160.00 |
| 36 | 8 | 420 | 2 | 119.00 | 174.00 |
| 36 | 10 | 525 | 2 | 140.00 | ..... |
| 42 | 6 | 435 | 2 | 145.00 | ..... |
| 42 | 7 | 500 | 2 | 160.00 | ..... |
| 42 | 8 | 575 | 2 | 174.00 | ..... |
| 42 | 10 | 720 | 2 | 192.00 | ..... |
| 42 | 12 | 865 | 2 | 242.00 | ..... |
| 42 | 14 | 1,000 | 2 | 266.00 | ..... |

Above list includes standard tappings as shown. An extra charge will be made for additional tappings or manholes.

Asbestos Cement

Amount of Cement required to cover IDEAL Boilers
1 1/4 inches thick:—

Asbestos should be applied to a warm surface in thin coats; the first coat should be left a rough surface and allowed to dry. Mix with water and apply with a trowel, finishing with a wet brush. When dry give a coat of paint; or when applying last coat, mix asbestos half and half with Portland Cement; final coat should be about 1/8-inch thick, with a very hard finish.

Arco Steam and Water

| No. of Boiler | Lbs. | No. of Boiler | Lbs. |
|---------------|------|---------------|------|
| 4-19..... | 125 | 27-7..... | 450 |
| 5-19..... | 150 | 25-8..... | 500 |
| 6-19..... | 175 | 28-5..... | 500 |
| 4-22..... | 150 | 28-6..... | 575 |
| 5-22..... | 175 | 28-7..... | 650 |
| 6-22..... | 200 | 28-8..... | 725 |
| 4-25..... | 175 | 36-5..... | 575 |
| 5-25..... | 200 | 36-6..... | 650 |
| 6-25..... | 225 | 36-7..... | 725 |
| 4-28..... | 200 | 36-8..... | 800 |
| 5-28..... | 250 | 36-9..... | 875 |
| 6-28..... | 275 | 4806..... | 850 |
| 4-31..... | 250 | 4807..... | 950 |
| 5-31..... | 300 | 4808..... | 1050 |
| 6-31..... | 325 | 4809..... | 1150 |
| 4-34..... | 300 | 4810..... | 1250 |
| 5-34..... | 350 | 364..... | 475 |
| 6-34..... | 375 | 374..... | 550 |
| | | 384..... | 625 |
| | | 394..... | 700 |
| | | 468..... | 650 |
| | | 478..... | 725 |
| | | 488..... | 800 |
| | | 498..... | 875 |
| | | 4108..... | 950 |
| | | 670..... | 950 |
| | | 680..... | 1050 |
| | | 690..... | 1150 |
| | | 6100..... | 1250 |

Sectional Steam and Water

| | |
|-----------|-----|
| 19-5..... | 240 |
| 19-6..... | 280 |
| 19-7..... | 320 |
| 22-5..... | 275 |
| 22-6..... | 325 |
| 22-7..... | 375 |
| 25-5..... | 350 |
| 25-6..... | 400 |

Notes on Chimney Flues

The value of the flue depends on area and velocity. Velocity alone is no proof of good draft—there must be also sufficient area to carry the gases.

The chimney-top should run above the highest part of the roof and should not be less in height than shown in table.

The chimney should be so located with reference to any higher buildings nearby that wind-currents will not form eddies and force the air downward in the shaft. A shifting cowl, which will always turn the outlet away from the adverse currents, will promote better draft.

The flue should run as nearly straight as possible from the base to the top outlet. The outlet must not be capped so that its area is less than the area of the flue. The flue should have no other openings into it but the Boiler smoke pipe. Sharp bends and offsets in the flue will often reduce the area and choke the draft. The flue must be free of any feature which prevents full area for the passage of smoke, etc.

If the flue is made of tile the joints must be well cemented, or all space between the tile and brick-work filled in tightly. There must be no open crevices into the flue where the sections meet—otherwise the draft is checked.

If the flue is made of brick, the stack should have outside walls at least eight inches thick to insure safety. The inside joints should be well struck; each course should be well bedded and free from surplus mortar at the joints.

If there is a soot-pocket in the flue below the smoke pipe opening, the clean-out door should always be tightly closed. If this soot-pocket has other openings in it—from fire-places or other connections—these openings check the draft and prevent best heating results from the Boiler.

Notes on Chimney Flues—Continued

The smoke pipe should not extend into the flue beyond the inside surface of the flue, otherwise the end of the pipe cuts down the area of the flue.

The joints, where the smoke pipe fits the smoke-hood of the boiler, or where the pipe enters the chimney, should be made tight with boiler putty or asbestos cement.

In the following table are shown commercial sizes of tile and unlined brick chimney flues and it will be noted that the actual and commercial sizes do not agree: Flues laid up in brickwork give a larger area than would be indicated by the commercial sizes; on the other hand, the dimensions of the tile linings are the outside dimensions, so that the actual area of a tile is less than would be indicated by the commercial size.

Table

| Commercial Size | Actual Inside Area in Square Inches. | |
|--------------------|--------------------------------------|---------------|
| | Tile | Unlined Brick |
| 7 x 7 | 33 | .. |
| 8 x 8 | .. | 72 |
| 8½ x 8½ | 52 | .. |
| 8 x 12 | .. | 110 |
| 8½ x 13 | 80 | .. |
| 12 x 12 | .. | 169 |
| 13 x 13 | 126 | .. |
| 12 x 16 | .. | 221 |
| 13 x 18 | 169 | .. |
| 16 x 16 | .. | 289 |
| 16 x 20 | .. | 365 |
| 18 x 18 | 240 | .. |
| 20 x 20 | .. | 450 |
| 20 x 24 | .. | 530 |
| 24 x 24 | .. | 640 |
| 28 x 28 | .. | 880 |

Cleaning Steam Boilers

Accumulations of oil, grease or grit in a new system causes a Boiler to foam, prevents generation of steam, and produces an unsteady water line, therefore it is necessary to blow off Boiler under pressure. This should be done within a week after the Boiler is installed and in operation. If one blowing off does not result in a clean water-gauge glass, proper generation of steam and a steady water line, the Boiler should be blown off a second, and if necessary a third time. This rule will produce good results:—

When Water Supply Pressure Is Available

Remove the safety valve from the Boiler and connect a blow-off pipe to the opening, extending the pipe to the outside of the building or to some suitable drain. The size of this pipe should be as follows:—

| | | |
|--------------------|-----------------------------|---------------------------|
| Boilers rated from | 600 sq. ft. to 1200 sq. ft. | $\frac{3}{4}$ -in. pipe |
| " | " | " |
| " | 1200 | " |
| " | " | 2500 |
| " | " | " |
| " | 2500 | " |
| " | " | 4500 |
| " | " | " |
| " | larger than 4500 sq. ft. | $1\frac{1}{2}$ -in. |
| " | " | " |

A $\frac{3}{4}$ -inch garden hose is of sufficient capacity for a Boiler of about 800 square feet.

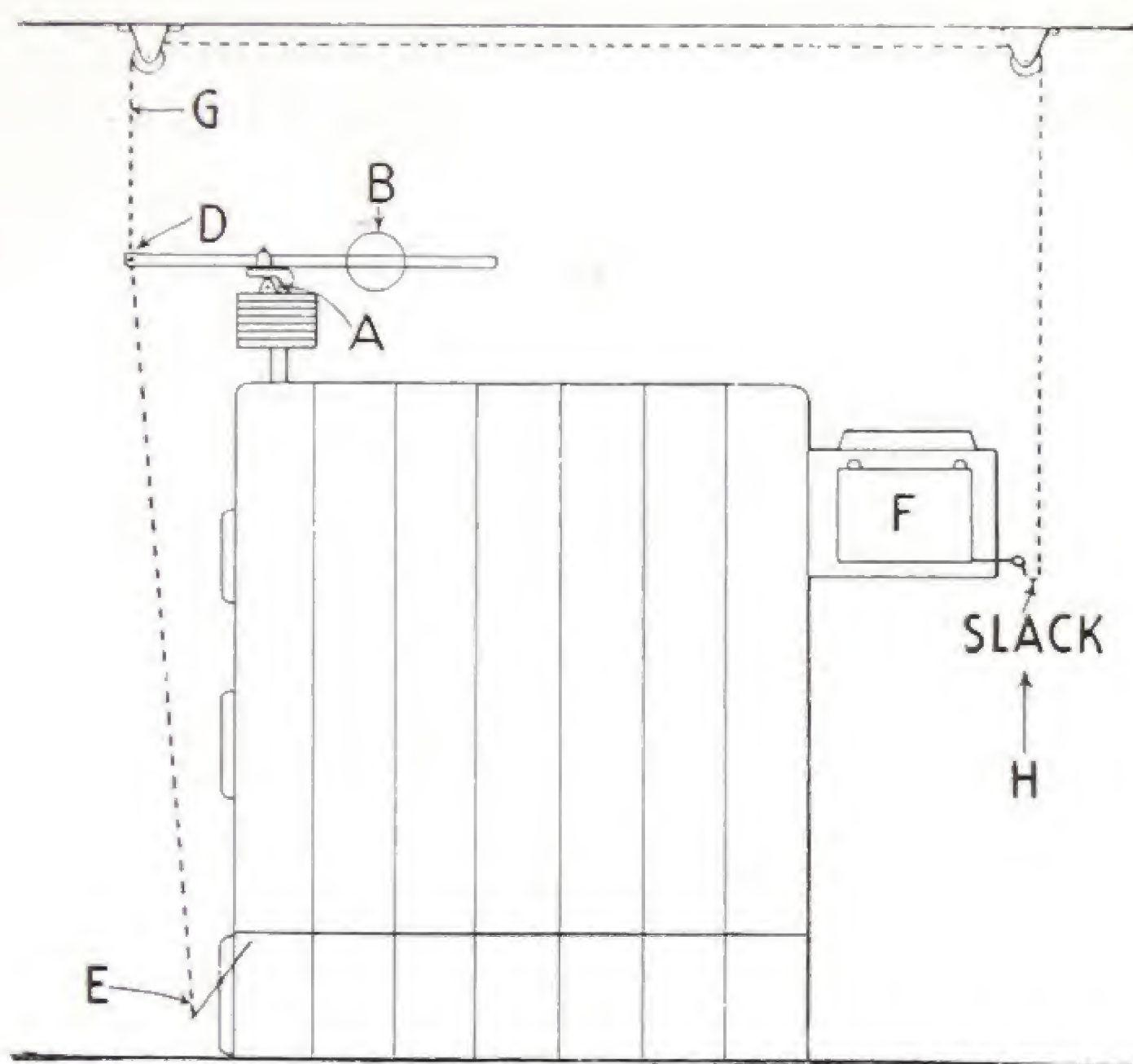
Close off all the Radiator valves connected with the system, or if the main flow and return pipes are equipped with gate valves, these valves may be closed in place of closing the Radiator valves.

Fill the Boiler to the top of gauge glass with water. Build hot fire in Boiler and blow water and steam out through the safety valve tapping and pipe above referred to. Maintain as much steam pressure as possible in Boiler up to 20 pounds, as indicated on steam gauge. Supply cold water in the bottom of the Boiler and maintain water line at top of gauge glass at a point which will permit the steam to siphon water and grease from the surface of the water in Boiler. Continue the blowing for about two hours. Then close off the water feed valve and drain the water through the draw-off down to the proper water line in the Boiler.

Remove the blow-off pipe and replace the safety valve.

Open up Radiator valves or the gate valves on the flow and return pipes, as the case may be, and then the heating outfit is ready for operation with the Boiler thoroughly cleaned inside.

Adjusting Arco Steam Regulator



After Boiler is set up and under fire, raise whatever steam pressure it is desired to maintain, say 2 pounds.

When the gauge shows 2 pounds, adjust the weight "B" on the Regulator lever so that the chain connecting Tilting Draft Damper "E" and Check Draft Damper "F" is just taut, both dampers being closed. Then, when the front Draft "E" is open a little and Check Draft "F" closed there will be a little slack in the chain as shown at the right or vice versa. The slack naturally comes in stretch of chain along ceiling, but slack at "H" shows relative amount.

If any greater pressure is generated the Check Damper "F" will open and check the combustion, the pressure will lower to 2 pounds, then the Check Damper will close. If the fire is clean, the pressure will gradually increase without opening the Tilting Draft "E" and the Regulator will operate the Check Draft only until the grate becomes covered with ashes, then the pressure will drop below 2 pounds, and the Regulator will operate the Tilting Draft door on the ashpit.

The chains should never be disconnected from the doors, but any adjustment of pressures should be regulated by moving the weight "B" on the lever. From fulcrum "A" to end of lever "D" should never be less than 18 inches.

Constants for Heat Transmission

B. t. u. transmitted per square foot per hour per degree difference in temperature between inside and outside air are as follows:

Constants for Brick Work

| | | |
|-------------------|-------------------|-------------------|
| 4 in. thick—0.68 | 16 in. thick—0.27 | 28 in. thick—0.18 |
| 8 in. thick—0.46 | 20 in. thick—0.23 | 32 in. thick—0.16 |
| 12 in. thick—0.33 | 24 in. thick—0.20 | 36 in. thick—0.15 |

Miscellaneous Constants

Reinforced concrete, 20 per cent. more than brick. Add one third more for stone. Add one-half more for cement or concrete walls.

| | |
|--------------------------------------|-----------------------------------|
| 1 sq. ft. of wood as flooring 0.083 | 1 single skylight.....1.118 |
| 1 sq. ft. of wood as ceiling 0.104 | 1 double window.....0.560 |
| 1 sq. ft. of wood as wall...0.220 | 1 double skylight.....0.621 |
| 1 sq. ft. fireproof flooring...0.124 | 1 door.....0.420 |
| 1 sq. ft. fireproof ceiling...0.145 | Cor. iron wall.....0.840 |
| 1 sq. cement as flooring....0.310 | Wood wall.....0.280 |
| 1 sq. ft. dirt as flooring....0.230 | Copper, silver-plated and |
| 1 sq. ft. wood, under slate, | polished.....0.02657 |
| or composition roof.....0.300 | Copper, polished.....0.03270 |
| 1 sq. ft. wood, under iron..0.170 | Zinc and brass, polished..0.04906 |
| 1 sq. ft. tile (no bds. under- | Sheet iron.....0.08585 |
| neath).....1.250 | Cast iron, new.....0.6480 |
| 1 sq. ft. cement roof.....0.600 | Cast iron, rusted.....0.6868 |
| 1 single window.....1.090 | Oil or varnish.....1.4800 |
| 1 single monitor.....0.950 | |

The amount in square feet of each kind of surface is to be multiplied by its respective constant is shown above, and by the difference in temperature between inside and outside air. The sum of the above B. t. u. gives the loss of heat by exposure. Add to the above as follows:

Ten per cent. for norther exposure and where the winds are to be counted on as an important factor.

Ten per cent. if heated day time only, and the location of the building is not exposed.

Twenty per cent. when the building is heated day time only, and the location of the building is exposed.

Thirty per cent. when the building is heated during winter months intermittently with long intervals of non-heating.

NOTE.—The above factors are compiled from well-known authorities

Circumference of Circles

| Diam. | Circumference | Diam. | Circumference | Diam. | Circumference | Diam. | Circumference |
|----------------|---------------|-----------------|---------------|-------|---------------|-------|---------------|
| $\frac{1}{8}$ | .3927 | 10 | 31.416 | 30 | 94.248 | 65 | 204.204 |
| $\frac{1}{4}$ | .7854 | $10\frac{1}{2}$ | 32.987 | 31 | 97.389 | 66 | 207.345 |
| $\frac{3}{8}$ | 1.1781 | 11 | 34.558 | 32 | 100.531 | 67 | 210.487 |
| $\frac{1}{2}$ | 1.5708 | $11\frac{1}{2}$ | 36.128 | 33 | 103.673 | 68 | 213.628 |
| $\frac{5}{8}$ | 1.9635 | 12 | 37.699 | 34 | 106.814 | 69 | 216.770 |
| $\frac{3}{4}$ | 2.3562 | $12\frac{1}{2}$ | 39.270 | 35 | 109.956 | 70 | 219.911 |
| $\frac{7}{8}$ | 2.7489 | 13 | 40.841 | 36 | 113.097 | 71 | 223.053 |
| 1 | 3.1416 | $13\frac{1}{2}$ | 42.412 | 37 | 116.239 | 72 | 226.195 |
| $1\frac{1}{8}$ | 3.5343 | 14 | 43.982 | 38 | 119.381 | 73 | 229.336 |
| $1\frac{1}{4}$ | 3.9270 | $14\frac{1}{2}$ | 45.553 | 39 | 122.522 | 74 | 232.478 |
| $1\frac{3}{8}$ | 4.3197 | 15 | 47.124 | 40 | 125.664 | 75 | 235.619 |
| $1\frac{1}{2}$ | 4.7124 | $15\frac{1}{2}$ | 48.695 | 41 | 128.805 | 76 | 238.761 |
| $1\frac{5}{8}$ | 5.1051 | 16 | 50.265 | 42 | 131.947 | 77 | 241.902 |
| $1\frac{3}{4}$ | 5.4978 | $16\frac{1}{2}$ | 51.836 | 43 | 135.088 | 78 | 245.044 |
| $1\frac{7}{8}$ | 5.8905 | 17 | 53.407 | 44 | 138.230 | 79 | 248.186 |
| 2 | 6.2832 | $17\frac{1}{2}$ | 54.978 | 45 | 141.372 | 80 | 251.327 |
| $2\frac{1}{4}$ | 7.0686 | 18 | 56.549 | 46 | 144.513 | 81 | 254.469 |
| $2\frac{1}{2}$ | 7.8540 | $18\frac{1}{2}$ | 58.119 | 47 | 147.655 | 82 | 257.611 |
| $2\frac{3}{4}$ | 8.6394 | 19 | 59.690 | 48 | 150.796 | 83 | 260.752 |
| 3 | 9.4248 | $19\frac{1}{2}$ | 61.261 | 49 | 153.938 | 84 | 263.894 |
| $3\frac{1}{4}$ | 10.210 | 20 | 62.832 | 50 | 157.080 | 85 | 267.035 |
| $3\frac{1}{2}$ | 10.996 | $20\frac{1}{2}$ | 64.403 | 51 | 160.221 | 86 | 270.177 |
| $3\frac{3}{4}$ | 11.781 | 21 | 65.973 | 52 | 163.363 | 87 | 273.319 |
| 4 | 12.566 | $21\frac{1}{2}$ | 67.544 | 53 | 166.504 | 88 | 276.460 |
| $4\frac{1}{2}$ | 14.137 | 22 | 69.115 | 54 | 169.646 | 89 | 279.602 |
| 5 | 15.708 | $22\frac{1}{2}$ | 70.686 | 55 | 172.788 | 90 | 282.743 |
| $5\frac{1}{2}$ | 17.279 | 23 | 72.257 | 56 | 175.929 | 91 | 285.885 |
| 6 | 18.850 | $23\frac{1}{2}$ | 73.827 | 57 | 179.071 | 92 | 289.027 |
| $6\frac{1}{2}$ | 20.420 | 24 | 75.398 | 58 | 182.212 | 93 | 292.168 |
| 7 | 21.991 | $24\frac{1}{2}$ | 76.969 | 59 | 185.354 | 94 | 295.310 |
| $7\frac{1}{2}$ | 23.562 | 25 | 78.540 | 60 | 188.496 | 95 | 298.451 |
| 8 | 25.133 | 26 | 81.681 | 61 | 191.637 | 96 | 301.593 |
| $8\frac{1}{2}$ | 26.704 | 27 | 84.823 | 62 | 194.779 | 97 | 304.734 |
| 9 | 28.274 | 28 | 87.965 | 63 | 197.920 | 98 | 307.876 |
| $9\frac{1}{2}$ | 29.845 | 29 | 91.106 | 64 | 201.062 | 99 | 311.018 |

To find the circumference of a circle when diameter is given, multiply the given diameter by 3.1416.

Areas of Circles

| Diam. | Area | Diam. | Area | Diam. | Area | Diam. | Area |
|----------------|--------|-----------------|--------|-------|--------|-------|--------|
| $\frac{1}{8}$ | 0.0123 | 10 | 78.54 | 30 | 706.86 | 65 | 3318.3 |
| $\frac{1}{4}$ | 0.0491 | $10\frac{1}{2}$ | 86.59 | 31 | 754.76 | 66 | 3421.2 |
| $\frac{3}{8}$ | 0.1104 | 11 | 95.03 | 32 | 804.24 | 67 | 3525.6 |
| $\frac{1}{2}$ | 0.1963 | $11\frac{1}{2}$ | 103.86 | 33 | 855.30 | 68 | 3631.6 |
| $\frac{5}{8}$ | 0.3067 | 12 | 113.09 | 34 | 907.92 | 69 | 3739.2 |
| $\frac{3}{4}$ | 0.4417 | $12\frac{1}{2}$ | 122.71 | 35 | 962.11 | 70 | 3848.4 |
| $\frac{7}{8}$ | 0.6013 | 13 | 132.73 | 36 | 1017.8 | 71 | 3959.2 |
| 1 | 0.7854 | $13\frac{1}{2}$ | 143.13 | 37 | 1075.2 | 72 | 4071.5 |
| $1\frac{1}{8}$ | 0.9940 | 14 | 153.93 | 38 | 1134.1 | 73 | 4185.3 |
| $1\frac{1}{4}$ | 1.227 | $14\frac{1}{2}$ | 165.13 | 39 | 1194.5 | 74 | 4300.8 |
| $1\frac{3}{8}$ | 1.484 | 15 | 176.71 | 40 | 1256.6 | 75 | 4417.8 |
| $1\frac{1}{2}$ | 1.767 | $15\frac{1}{2}$ | 188.69 | 41 | 1320.2 | 76 | 4536.4 |
| $1\frac{5}{8}$ | 2.073 | 16 | 201.06 | 42 | 1385.4 | 77 | 4656.0 |
| $1\frac{3}{4}$ | 2.405 | $16\frac{1}{2}$ | 213.82 | 43 | 1452.2 | 78 | 4778.3 |
| $1\frac{7}{8}$ | 2.761 | 17 | 226.98 | 44 | 1520.5 | 79 | 4901.6 |
| 2 | 3.141 | $17\frac{1}{2}$ | 240.52 | 45 | 1590.4 | 80 | 5026.5 |
| $2\frac{1}{4}$ | 3.976 | 18 | 254.46 | 46 | 1661.9 | 81 | 5153.0 |
| $2\frac{1}{2}$ | 4.908 | $18\frac{1}{2}$ | 268.80 | 47 | 1734.9 | 82 | 5281.0 |
| $2\frac{3}{4}$ | 5.939 | 19 | 283.52 | 48 | 1809.5 | 83 | 5410.6 |
| 3 | 7.068 | $19\frac{1}{2}$ | 298.64 | 49 | 1885.7 | 84 | 5541.7 |
| $3\frac{1}{4}$ | 8.295 | 20 | 314.16 | 50 | 1963.5 | 85 | 5674.5 |
| $3\frac{1}{2}$ | 9.621 | $20\frac{1}{2}$ | 330.06 | 51 | 2042.8 | 86 | 5808.8 |
| $3\frac{3}{4}$ | 11.044 | 21 | 346.36 | 52 | 2123.7 | 87 | 5944.6 |
| 4 | 12.566 | $21\frac{1}{2}$ | 363.05 | 53 | 2206.1 | 88 | 6082.1 |
| $4\frac{1}{2}$ | 15.904 | 22 | 380.13 | 54 | 2290.2 | 89 | 6221.1 |
| 5 | 19.635 | $22\frac{1}{2}$ | 397.60 | 55 | 2375.8 | 90 | 6361.7 |
| $5\frac{1}{2}$ | 23.758 | 23 | 415.47 | 56 | 2463.0 | 91 | 6503.8 |
| 6 | 28.274 | $23\frac{1}{2}$ | 433.73 | 57 | 2551.7 | 92 | 6647.6 |
| $6\frac{1}{2}$ | 33.183 | 24 | 452.39 | 58 | 2642.0 | 93 | 6792.9 |
| 7 | 38.484 | $24\frac{1}{2}$ | 471.43 | 59 | 2733.9 | 94 | 6939.7 |
| $7\frac{1}{2}$ | 44.178 | 25 | 490.87 | 60 | 2827.4 | 95 | 7088.2 |
| 8 | 50.265 | 26 | 530.93 | 61 | 2922.4 | 96 | 7238.2 |
| $8\frac{1}{2}$ | 56.745 | 27 | 572.55 | 62 | 3019.0 | 97 | 7389.8 |
| 9 | 63.617 | 28 | 615.75 | 63 | 3117.2 | 98 | 7542.9 |
| $9\frac{1}{2}$ | 70.882 | 29 | 660.52 | 64 | 3216.9 | 99 | 7697.7 |

To find the area of a circle when diameter is given, multiply the square of the diameter by .7854.

Useful Information

Doubling the Diameter of a Pipe increases its capacity four times.

Wrought Iron Steam and Gas Pipe is reckoned by its internal diameter.

Boiler Tubes are reckoned by their external diameter.

Area of Chimney should be one-seventh to one-tenth area of grate.

One Square Foot of Grate Area will average in consumption in low pressure steam boilers 3 to 5 pounds anthracite coal per hour.

One Square Foot of Grate Area will average in consumption in high pressure steam boilers 12 pounds anthracite coal per hour.

Average Consumption of fuel is $7\frac{1}{2}$ pounds coal to evaporate one cubic foot of water.

A Ton of Hard Coal occupies a space equal to 37 cubic feet.

A Ton of Soft Coal occupies a space equal to 40 cubic feet.

Two Tons of Hard Coal to a hundred square feet water radiation, is the estimated fuel consumption for the winter's firing, for hot water heating.

A Ton and a Half of Hard Coal to a hundred square feet of water radiation is the estimated fuel consumption for the winter's firing for Vapor Heating.

A Ton of Hard Coal is considered equal to a ton and a half of soft coal.

One pound of Gold or Color Bronze requires one quart of liquid and will cover from 250 to 300 feet of radiation.

One pound of Aluminum Bronze requires three quarts of liquid and will cover from 500 to 600 square feet of radiation.

A Column of Water 27.67 inches high has a pressure of one pound to the inch, approximately it is estimated that every foot of water equals one-half pound pressure.

Multiplying the Height of a Column of Water by .434 gives pressure in pounds.

A Cubic Foot of Water weighs 62.321 pounds and equals 7.48 U.S. gallons.

Water in Circulation is the best known absorbent of heat, and gives out more heat in cooling through a given range of temperature than any known substance.

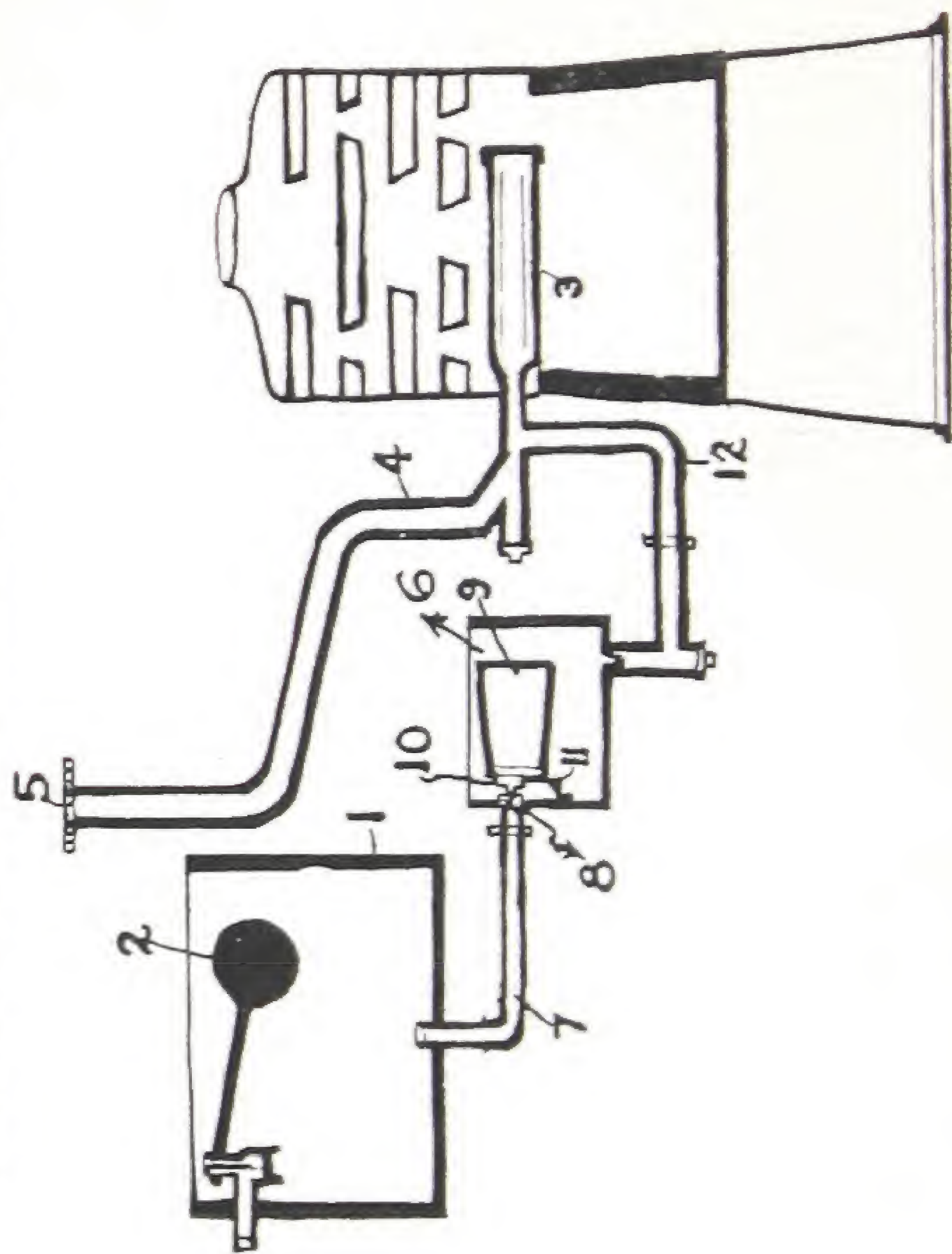
A Hundred Square Feet of radiation contains approximately 15 gallons of water.

Heat Unit, known as British Thermal Unit, or B.T.U., raises temperature of one pound of water one degree Fah.

Fifteen square feet of heating surface in a standard tubular boiler is estimated as equal to One Horse Power.

A Horse Power is estimated equal 75 to 100 square feet direct radiation.

The G & E Automatic Humidifier



Furnishes the necessary moisture to the air in houses heated by Hot Water circulation to make January weather seem like June.

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